

## Safety data sheet

Page: 1/131

BASF safety data sheet. This is a translation of the country-specific safety data sheet into a language other than that required by law. This document does not replace the safety data sheet provided according to Regulation (EC) No 1907/2006.

Date / Revised: 11.09.2023 Date previous version: 14.11.2022 Previous version: 4.0

Date / First version: 05.06.2014

Product: ISOBUTANOL

(ID no. 30034839/SDS\_GEN\_RO/EN)

Date of print 21.10.2025

## SECTION 1: Identification of the substance/mixture and of the company/undertaking

## 1.1. Product identifier

## **ISOBUTANOL**

Chemical name: isobutyl alcohol INDEX-Number: 603-108-00-1

CAS Number: 78-83-1

REACH registration number: 01-2119484609-23-0000, 01-2119484609-23-0011, 01-2119484609-

23-0013, 01-2119484609-23

#### 1.2. Relevant identified uses of the substance or mixture and uses advised against

Relevant identified uses: Chemical

For the detailed identified uses of the product see appendix of the safety data sheet.

## 1.3. Details of the supplier of the safety data sheet

Company: **BASF SE** 67056 Ludwigshafen **GERMANY** 

**BASF SRL** Floreasca Park

Sos.Pipera nr.43, corp A, etaj 1

014254 Bucharest

Contact address:

**ROMANIA** 

Telephone: +40 21 5299-029

E-mail address: product-safety-romania@basf.com

## 1.4. Emergency telephone number

Numar national pentru cazuri de urgenta:

to Regulation (EC) No 1907/2006.

Date / Revised: 11.09.2023 Version: 5.0
Date previous version: 14.11.2022 Previous version: 4.0

Date / First version: 05.06.2014

Product: **ISOBUTANOL** 

(ID no. 30034839/SDS\_GEN\_RO/EN)

Date of print 21.10.2025

+40 21 599 23 00 Centrul de Informatii Toxicologice – Spitalul Clinic de Urgenta Bucuresti

International emergency number: Telephone: +49 180 2273-112

## **SECTION 2: Hazards Identification**

## 2.1. Classification of the substance or mixture

#### According to Regulation (EC) No 1272/2008 [CLP]

Flam. Lig. 3 H226 Flammable liquid and vapour.

Skin Corr./Irrit. 2 H315 Causes skin irritation.

Eye Dam./Irrit. 1 H318 Causes serious eye damage.

STOT SE 3 H336 May cause drowsiness or dizziness. STOT SE 3 H335 May cause respiratory irritation.

For the classifications not written out in full in this section the full text can be found in section 16.

#### 2.2. Label elements

## According to Regulation (EC) No 1272/2008 [CLP]

#### Pictogram:







Signal Word:

## Danger

#### Hazard Statement:

H226 Flammable liquid and vapour. H318 Causes serious eye damage.

H315 Causes skin irritation.

H336 May cause drowsiness or dizziness. H335 May cause respiratory irritation.

#### Precautionary Statements (Prevention):

P280 Wear protective gloves and eye protection or face protection.

P271 Use only outdoors or in a well-ventilated area.

Precautionary Statements (Response):

P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove

contact lenses, if present and easy to do. Continue rinsing.

P310 Immediately call a POISON CENTER or physician.

Precautionary Statements (Storage):

P233 Keep container tightly closed.

Precautionary Statements (Disposal):

P501 Dispose of contents and container to hazardous or special waste

collection point.

to Regulation (EC) No 1907/2006.

Date / Revised: 11.09.2023 Version: 5.0
Date previous version: 14.11.2022 Previous version: 4.0

Date / First version: 05.06.2014

Product: **ISOBUTANOL** 

(ID no. 30034839/SDS\_GEN\_RO/EN)

Date of print 21.10.2025

#### 2.3. Other hazards

## According to Regulation (EC) No 1272/2008 [CLP]

If applicable information is provided in this section on other hazards which do not result in classification but which may contribute to the overall hazards of the substance or mixture. See section 12 - Results of PBT and vPvB assessment.

Product does not contain a substance above legal limits included in the list established in accordance with Article 59(1) of Regulation (EC) No 1907/2006 for having endocrine disrupting properties or is identified to have endocrine disrupting properties in accordance with the criteria set out in Commission Delegated Regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605.

## **SECTION 3: Composition/Information on Ingredients**

## 3.1. Substances

## Chemical nature

2-methylpropan-1-ol

 Content (W/W): > 99,5 %
 Flam. Liq. 3

 CAS Number: 78-83-1
 Skin Corr./Irrit. 2

 EC-Number: 201-148-0
 Eye Dam./Irrit. 1

STOT SE 3 (drowsiness and dizziness) STOT SE 3 (irr. to respiratory syst.) H226, H318, H315, H336, H335

#### Regulatory relevant ingredients

2-methylpropan-1-ol

Content (W/W): >= 99,63 % - <= Flam. Liq. 3 99,845 % Skin Corr./Irrit. 2

CAS Number: 78-83-1 Eye Dam./Irrit. 1
EC-Number: 201-148-0 STOT SE 3 (drov

STOT SE 3 (drowsiness and dizziness) STOT SE 3 (irr. to respiratory syst.) H226, H318, H315, H336, H335

butan-1-ol

Content (W/W): >= 0,001 % - <=

0,201 %

CAS Number: 71-36-3 EC-Number: 200-751-6

Flam. Liq. 3 Acute Tox. 4 (oral) Skin Corr./Irrit. 2 Eye Dam./Irrit. 1

STOT SE 3 (drowsiness and dizziness) STOT SE 3 (irr. to respiratory syst.) H226, H318, H315, H302, H336, H335

to Regulation (EC) No 1907/2006.

Date / Revised: 11.09.2023 Version: 5.0
Date previous version: 14.11.2022 Previous version: 4.0

Date / First version: 05.06.2014

Product: ISOBUTANOL

(ID no. 30034839/SDS\_GEN\_RO/EN)

Date of print 21.10.2025

Content (W/W): >= 0 % - <= 0,1 % Flam. Liq. 2 CAS Number: 71-23-8 Eye Dam./Irrit. 1

EC-Number: 200-746-9 STOT SE 3 (drowsiness and dizziness)

INDEX-Number: 603-003-00-0 H225, H318, H336

For the classifications not written out in full in this section, including the hazard classes and the hazard statements, the full text is listed in section 16.

#### 3.2. Mixtures

Not applicable

## **SECTION 4: First-Aid Measures**

## 4.1. Description of first aid measures

First aid personnel should pay attention to their own safety. If the patient is likely to become unconscious, place and transport in stable sideways position (recovery position). Immediately remove contaminated clothing.

#### If inhaled:

Keep patient calm, remove to fresh air, seek medical attention. Immediately administer a corticosteroid from a controlled/metered dose inhaler.

#### On skin contact:

Immediately wash thoroughly with plenty of water, apply sterile dressings, consult a skin specialist.

#### On contact with eyes:

Immediately wash affected eyes for at least 15 minutes under running water with eyelids held open, consult an eye specialist.

#### On ingestion:

Immediately rinse mouth and then drink 200-300 ml of water, seek medical attention.

## 4.2. Most important symptoms and effects, both acute and delayed

Symptoms: Information, i.e. additional information on symptoms and effects may be included in the GHS labeling phrases available in Section 2 and in the Toxicological assessments available in Section 11.

Hazards: Information, i.e. additional information on symptoms and effects may be included in the GHS labeling phrases available in Section 2 and in the Toxicological assessments available in Section 11. (Further) symptoms and / or effects are not known so far

## 4.3. Indication of any immediate medical attention and special treatment needed

Treatment: Treat according to symptoms (decontamination, vital functions), no known specific antidote.

to Regulation (EC) No 1907/2006. Date / Revised: 11.09.2023

Version: 5.0 Previous version: 4.0

Date previous version: 14.11.2022 Date / First version: 05.06.2014

Product: ISOBUTANOL

(ID no. 30034839/SDS\_GEN\_RO/EN)

Date of print 21.10.2025

## **SECTION 5: Fire-Fighting Measures**

## 5.1. Extinguishing media

Suitable extinguishing media:

dry powder, water spray, carbon dioxide, alcohol-resistant foam

Unsuitable extinguishing media for safety reasons:

water jet

Additional information:

Use extinguishing measures to suit surroundings.

## 5.2. Special hazards arising from the substance or mixture

Advice: Flammable liquid Cool endangered containers with water-spray. See SDS section 7 - Handling and storage.

## 5.3. Advice for fire-fighters

Special protective equipment:

Wear a self-contained breathing apparatus. Special protective equipment for firefighters

Further information:

Evacuate area of all unnecessary personnel. Fight fire from maximum distance.

Extend fire extinguishing measures to the surroundings. Dispose of fire debris and contaminated extinguishing water in accordance with official regulations.

## **SECTION 6: Accidental Release Measures**

High risk of slipping due to leakage/spillage of product.

Release of substance/product can cause fire or explosion. Shut off or stop source of leak. Shut off or stop released substance/product under safe conditions.

Pack in tightly closed containers for disposal.

## 6.1. Personal precautions, protective equipment and emergency procedures

Handle in accordance with good industrial hygiene and safety practice.

Avoid all sources of ignition: heat, sparks, open flame. Use antistatic tools.

to Regulation (EC) No 1907/2006.

Date / Revised: 11.09.2023 Version: 5.0
Date previous version: 14.11.2022 Previous version: 4.0

Date / First version: 05.06.2014

Product: **ISOBUTANOL** 

(ID no. 30034839/SDS\_GEN\_RO/EN)

Date of print 21.10.2025

## 6.2. Environmental precautions

Discharge into the environment must be avoided.

## 6.3. Methods and material for containment and cleaning up

Pick up with suitable appliance and dispose of. Spills should be contained, solidified, and placed in suitable containers for disposal. Dispose of absorbed material in accordance with regulations.

#### 6.4. Reference to other sections

Information regarding exposure controls/personal protection and disposal considerations can be found in section 8 and 13.

## **SECTION 7: Handling and Storage**

## 7.1. Precautions for safe handling

Handle in accordance with good industrial hygiene and safety practice.

Protection against fire and explosion:

Avoid all sources of ignition: heat, sparks, open flame. Ground all transfer equipment properly to prevent electrostatic discharge.

## 7.2. Conditions for safe storage, including any incompatibilities

Further information on storage conditions: Keep container tightly closed and dry; store in a cool place.

## 7.3. Specific end use(s)

See exposure scenario(s) in the attachment to this safety data sheet.

## **SECTION 8: Exposure Controls/Personal Protection**

## 8.1. Control parameters

Components with occupational exposure limits

78-83-1: 2-methylpropan-1-ol

TWA value 100 mg/m3; 33 ppm (OEL (RO)) STEL value 200 mg/m3; 66 ppm (OEL (RO))

Ceiling limit value/factor: 15 min

**PNEC** 

freshwater: 0,4 mg/l

marine water: 0,04 mg/l

to Regulation (EC) No 1907/2006.

Date / Revised: 11.09.2023 Version: 5.0
Date previous version: 14.11.2022 Previous version: 4.0

Date / First version: 05.06.2014

Product: ISOBUTANOL

(ID no. 30034839/SDS\_GEN\_RO/EN)

Date of print 21.10.2025

intermittent release: 11 mg/l

sediment (freshwater): 1,56 mg/kg

sediment (marine water): 0,156 mg/kg

soil: 0,0765 mg/kg

STP: 10 mg/l

## **DNEL**

worker:

Long-term exposure - local effects, Inhalation: 310 mg/m3

consumer:

Long-term exposure - local effects, Inhalation: 55 mg/m3

## 8.2. Exposure controls

#### Personal protective equipment

## Respiratory protection:

Wear respiratory protection if ventilation is inadequate. Gas filter for gases/vapours of organic compounds (boiling point >65 °C, e. g. EN 14387 Type A)

#### Hand protection:

Suitable chemical resistant safety gloves (EN ISO 374-1) also with prolonged, direct contact (Recommended: Protective index 6, corresponding > 480 minutes of permeation time according to EN ISO 374-1): E.g. nitrile rubber (0.4 mm), chloroprene rubber (0.5 mm), butyl rubber (0.7 mm) etc. Manufacturer's directions for use should be observed because of great diversity of types. Supplementary note: The specifications are based on tests, literature data and information of glove manufacturers or are derived from similar substances by analogy. Due to many conditions (e.g. temperature) it must be considered, that the practical usage of a chemical-protective glove in practice may be much shorter than the permeation time determined through testing.

## Eye protection:

Tightly fitting safety goggles (splash goggles) (e.g. EN 166)

#### Body protection:

Body protection must be chosen depending on activity and possible exposure, e.g. apron, protecting boots, chemical-protection suit (according to EN 14605 in case of splashes or EN ISO 13982 in case of dust).

#### General safety and hygiene measures

Avoid contact with the skin, eyes and clothing. Avoid inhalation of vapour. Wearing of closed work clothing is required additionally to the stated personal protection equipment.

Date / Revised: 11.09.2023 Version: 5.0 Date previous version: 14.11.2022 Previous version: 4.0

Date / First version: 05.06.2014

Product: **ISOBUTANOL** 

(ID no. 30034839/SDS\_GEN\_RO/EN)

Date of print 21.10.2025

## Environmental exposure controls

All appropriate measures must be taken to prevent the release of this product to the environment and to limit the dispersion of any release when it occurs. Suitable risk management measures should be in place.

## **SECTION 9: Physical and Chemical Properties**

## 9.1. Information on basic physical and chemical properties

State of matter: liquid Form: liquid Colour: colourless Odour: alcohol-like

Odour threshold:

not determined

< -90 °C Melting point: (ASTM D97)

108 °C Boiling point: (OECD Guideline 103)

(1.013 hPa)

Flammability: Flammable liquid and vapour. (derived from flash point)

Lower explosion limit: 1,1 %(V)

(19,9 °C)

The lower explosion point of the substance/mixture has been determined. The explosion point describes the temperature of a flammable liquid at which the

concentration of the saturated vapour mixed with air equals the lower

explosion limit.

11,7 %(V) Upper explosion limit:

(59,4 °C)

The upper explosion point of the substance/mixture has been determined. This explosion point describes the temperature of a flammable liquid at which the concentration of the saturated vapour

mixted with air equals the upper

explosion limit.

31°C Flash point: (ISO 2719, closed cup)

400 °C Auto-ignition temperature: (DIN 51794)

Thermal decomposition: No decomposition if stored and handled as prescribed/indicated.

pH value:

not applicable

3,103 mPa.s Viscosity, dynamic:

(20 °C)

Literature data.

to Regulation (EC) No 1907/2006.

Date / Revised: 11.09.2023 Version: 5.0
Date previous version: 14.11.2022 Previous version: 4.0

Date / First version: 05.06.2014

Product: **ISOBUTANOL** 

(ID no. 30034839/SDS\_GEN\_RO/EN)

Date of print 21.10.2025

Thixotropy: not thixotropic

Solubility in water: (OECD Guideline 105)

70 g/l (20 °C)

Solubility (qualitative) solvent(s): organic solvents

soluble

Partitioning coefficient n-octanol/water (log Kow): 1 (OECD Guideline 117)

(25 °C)

Vapour pressure: 9,5 hPa

(20 °C) 70,7 hPa (50 °C)

Relative density: 0,8017 (DIN 51757)

(20 °C)

Density: 0,8017 g/cm3 (DIN 51757)

(20 °C)

Relative vapour density (air):2,55 (calculated)

(20 °C)

Heavier than air.

Particle characteristics

Particle size distribution: The substance / product is marketed or used in a non solid or granular

form. -

## 9.2. Other information

## Information with regard to physical hazard classes

**Explosives** 

Explosion hazard: Based on the chemical structure

there is no indication of explosive

properties.

Impact sensitivity:

Based on the chemical structure there is no shock-sensitivity.

Oxidizing properties

Fire promoting properties: Based on its structural properties

the product is not classified as

oxidizing.

Flammable liquids

Sustained combustibility:

not determined

Pyrophoric properties

Self-ignition temperature: Test type: Spontaneous self-

ignition at room-temperature.

not self-igniting

Self-heating substances and mixtures

to Regulation (EC) No 1907/2006.

Date / Revised: 11.09.2023 Version: 5.0 Date previous version: 14.11.2022 Previous version: 4.0

Date / First version: 05.06.2014

Product: ISOBUTANOL

(ID no. 30034839/SDS\_GEN\_RO/EN)

Date of print 21.10.2025

Self heating ability: not applicable, the product is a liquid

Substances and mixtures, which emit flammable gases in contact with water

Formation of flammable gases:

Forms no flammable gases in the presence of water.

Corrosion to metals

No corrosive effect on metal.

## Other safety characteristics

pKA:

The substance does not dissociate.

KOC: 2,92; log KOC: 0,47 Adsorption/water - soil:

(calculated) Surface tension: (OECD-Guideline 115, Ring 69,7 mN/m

(20 °C; 1 g/l) method)

Molar mass: 74,12 g/mol

SAPT-Temperature:

Study scientifically not justified.

Evaporation rate:

Value can be approximated from Henry's Law Constant or vapor

pressure.

## **SECTION 10: Stability and Reactivity**

## 10.1. Reactivity

No corrosive effect on metal. Corrosion to metals:

Formation of Remarks: Forms no flammable gases in the

flammable gases: presence of water.

## 10.2. Chemical stability

The product is stable if stored and handled as prescribed/indicated.

#### 10.3. Possibility of hazardous reactions

Reacts with strong oxidizing agents.

#### 10.4. Conditions to avoid

No special precautions other than good housekeeping of chemicals.

## 10.5. Incompatible materials

Substances to avoid:

to Regulation (EC) No 1907/2006.

Date / Revised: 11.09.2023 Version: 5.0 Date previous version: 14.11.2022 Previous version: 4.0

Date / First version: 05.06.2014

Product: ISOBUTANOL

(ID no. 30034839/SDS\_GEN\_RO/EN)

Date of print 21.10.2025

strong oxidizing agents

## 10.6. Hazardous decomposition products

Hazardous decomposition products:

No hazardous decomposition products if stored and handled as prescribed/indicated.

## **SECTION 11: Toxicological Information**

## 11.1. Information on hazard classes as defined in Regulation (EC) No 1272/2008

#### Acute toxicity

Assessment of acute toxicity:

Of low toxicity after single ingestion. Of low toxicity after short-term skin contact. Virtually nontoxic by inhalation.

Experimental/calculated data:

LD50 rat (oral): > 2.830 - 3.350 mg/kg (OECD Guideline 401)

LC50 rat (by inhalation): > 18,18 mg/l 6 h (similar to OECD guideline 403)

The vapour was tested.

LD50 rabbit (dermal): > 2.000 - 2.460 mg/kg (OECD Guideline 402)

#### <u>Irritation</u>

Assessment of irritating effects:

May cause severe damage to the eyes. Skin contact causes irritation.

Experimental/calculated data:

Skin corrosion/irritation

rabbit: Irritant. (OECD Guideline 404)

Serious eye damage/irritation

rabbit: irreversible damage (OECD Guideline 405)

## Respiratory/Skin sensitization

Assessment of sensitization:

Skin sensitizing effects were not observed in animal studies. The product has not been tested. The statement has been derived from substances/products of a similar structure or composition.

Experimental/calculated data:

Guinea pig maximization test guinea pig: Non-sensitizing.

The product has not been tested. The statement has been derived from substances/products of a similar structure or composition.

#### Germ cell mutagenicity

Assessment of mutagenicity:

The substance was not mutagenic in bacteria. The substance was not mutagenic in mammalian cell culture. The substance was not mutagenic in studies with mammals.

to Regulation (EC) No 1907/2006.

Date / Revised: 11.09.2023 Version: 5.0
Date previous version: 14.11.2022 Previous version: 4.0

Date / First version: 05.06.2014

Product: **ISOBUTANOL** 

(ID no. 30034839/SDS\_GEN\_RO/EN)

Date of print 21.10.2025

## Carcinogenicity

Assessment of carcinogenicity:

The chemical structure does not suggest a specific alert for such an effect.

#### Reproductive toxicity

Assessment of reproduction toxicity:

The results of animal studies gave no indication of a fertility impairing effect.

#### Developmental toxicity

Assessment of teratogenicity:

No indications of a developmental toxic / teratogenic effect were seen in animal studies.

#### Experiences in humans

Experimental/calculated data:

High concentrations have a narcotizing effect.

Specific target organ toxicity (single exposure)

#### Assessment of STOT single:

Possible narcotic effects (drowsiness or dizziness). Causes temporary irritation of the respiratory tract.

## Repeated dose toxicity and Specific target organ toxicity (repeated exposure)

Assessment of repeated dose toxicity:

No substance-specific organtoxicity was observed after repeated administration to animals.

## Aspiration hazard

Some authorities consider isobutyl alcohol, n-primary alcohols and ketones with C3-C13 as "May be harmful if swallowed and enters airways"

## Interactive effects

No data available.

#### 11.2. Information on other hazards

#### **Endocrine disrupting properties**

The substance is not identified to have endocrine disrupting properties according to Regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 nor is included in the Candidate List of substances of very high concern according to EU REACh Article 59 for having endocrine disrupting properties.

Date / Revised: 11.09.2023 Version: 5.0
Date previous version: 14.11.2022 Previous version: 4.0

Date / First version: 05.06.2014

Product: ISOBUTANOL

(ID no. 30034839/SDS\_GEN\_RO/EN)

Date of print 21.10.2025

## **SECTION 12: Ecological Information**

## 12.1. Toxicity

Assessment of aquatic toxicity:

There is a high probability that the product is not acutely harmful to aquatic organisms. The inhibition of the degradation activity of activated sludge is not anticipated when introduced to biological treatment plants in appropriate low concentrations.

## Toxicity to fish:

LC50 (96 h) 1.430 mg/l, Pimephales promelas (Fish test acute, Flow through.)

The statement of the toxic effect relates to the analytically determined concentration.

#### Aquatic invertebrates:

EC50 (48 h) 1.100 mg/l, Daphnia pulex (ASTM E1193-97, static)

Nominal concentration.

## Aquatic plants:

EC50 (72 h) 1.799 mg/l (growth rate), Pseudokirchneriella subcapitata (OECD Guideline 201, static) The statement of the toxic effect relates to the analytically determined concentration.

#### Microorganisms/Effect on activated sludge:

Toxic limit concentration (16 h) 280 mg/l, Pseudomonas putida (DIN 38412 Part 8, aquatic)

#### Chronic toxicity to fish:

No data available regarding toxicity to fish.

#### Chronic toxicity to aquatic invertebrates:

No observed effect concentration (21 d) 20 mg/l, Daphnia magna (Daphnia test chronic, semistatic) Nominal concentration.

## Assessment of terrestrial toxicity:

No data available concerning terrestrial toxicity.

## 12.2. Persistence and degradability

Assessment biodegradation and elimination (H2O): Readily biodegradable (according to OECD criteria).

#### Elimination information:

70 - 80 % BOD of the ThOD (28 d) (OECD 301D; EEC 92/69, C.4-E) (aerobic, other)

#### Assessment of stability in water:

According to structural properties, hydrolysis is not expected/probable.

Information on Stability in Water (Hydrolysis):

to Regulation (EC) No 1907/2006.

Date / Revised: 11.09.2023 Version: 5.0
Date previous version: 14.11.2022 Previous version: 4.0

Date / First version: 05.06.2014

Product: ISOBUTANOL

(ID no. 30034839/SDS\_GEN\_RO/EN)

Date of print 21.10.2025

No data available.

No data available.

## 12.3. Bioaccumulative potential

Assessment bioaccumulation potential:

Significant accumulation in organisms is not to be expected.

Bioaccumulation potential:

No data available.

## 12.4. Mobility in soil

Assessment transport between environmental compartments:

Volatility: The substance will slowly evaporate into the atmosphere from the water surface.

Adsorption in soil: Adsorption to solid soil phase is not expected.

## 12.5. Results of PBT and vPvB assessment

According to Annex XIII of Regulation (EC) No.1907/2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH): The product does not fulfill the criteria for PBT (Persistent/bioaccumulative/toxic) and vPvB (very persistent/very bioaccumulative). Self classification

## 12.6. Endocrine disrupting properties

The substance is not identified to have endocrine disrupting properties according to Regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 nor is included in the Candidate List of substances of very high concern according to EU REACh Article 59 for having endocrine disrupting properties.

#### 12.7. Other adverse effects

The substance is not listed in Regulation (EC) 1005/2009 on substances that deplete the ozone layer.

## 12.8. Additional information

Adsorbable organically-bound halogen (AOX):

This product contains no organically-bound halogen.

to Regulation (EC) No 1907/2006.

Date / Revised: 11.09.2023 Version: 5.0
Date previous version: 14.11.2022 Previous version: 4.0

Date / First version: 05.06.2014

Product: **ISOBUTANOL** 

(ID no. 30034839/SDS\_GEN\_RO/EN)

Date of print 21.10.2025

## **SECTION 13: Disposal Considerations**

## 13.1. Waste treatment methods

National legislation regarding waste disposal:

GD 349/2005 on waste disposal

GD 856/2002 on waste management records and approving the list of wastes, including hazardous waste

GEO 92/2021 related to the waste regime

Contaminated packaging:

Disposal must be made according to official regulations.

## **SECTION 14: Transport Information**

## **Land transport**

ADR

UN number or ID number: UN1212

UN proper shipping name: ISOBUTANOL (ISOBUTYL ALCOHOL)

Transport hazard class(es): 3
Packing group: III
Environmental hazards: no

Special precautions for

Tunnel code: D/E

user:

RID

UN number or ID number: UN1212

UN proper shipping name: ISOBUTANOL (ISOBUTYL ALCOHOL)

Transport hazard class(es): 3
Packing group: III
Environmental hazards: no

Special precautions for

None known

user:

#### **Inland waterway transport**

ADN

UN number or ID number: UN1212

UN proper shipping name: ISOBUTANOL (ISOBUTYL ALCOHOL)

Transport hazard class(es): 3 Packing group: III

to Regulation (EC) No 1907/2006.

Date / Revised: 11.09.2023 Version: 5.0
Date previous version: 14.11.2022 Previous version: 4.0

Date / First version: 05.06.2014

Product: **ISOBUTANOL** 

(ID no. 30034839/SDS\_GEN\_RO/EN)

Date of print 21.10.2025

Environmental hazards: no

Special precautions for

None known

user:

<u>Transport in inland waterway vessel</u>
UN number or ID number: UN1212
UN proper shipping name: ISOBUTANOL

Transport hazard class(es): 3
Packing group: III
Environmental hazards: no
Type of inland waterway N

vessel:

Cargo tank design: 3 Cargo tank type: 2

#### Sea transport

**IMDG** 

UN number or ID number: UN 1212

UN proper shipping name: ISOBUTANOL (ISOBUTYL ALCOHOL)

Transport hazard class(es): 3
Packing group: III
Environmental hazards: no

Marine pollutant: NO

Special precautions for

user:

EmS: F-E; S-D

## Air transport

IATA/ICAO

UN number or ID number: UN 1212 UN proper shipping name: ISOBUTANOL

Transport hazard class(es): 3 Packing group: III

Environmental hazards: No Mark as dangerous for the environment is needed

Special precautions for

user:

None known

to Regulation (EC) No 1907/2006. Date / Revised: 11.09.2023

Version: 5.0 Previous version: 4.0

Date previous version: 14.11.2022 Date / First version: 05.06.2014

Product: **ISOBUTANOL** 

(ID no. 30034839/SDS\_GEN\_RO/EN)

Date of print 21.10.2025

#### 14.1. UN number or ID number

See corresponding entries for "UN number or ID number" for the respective regulations in the tables above.

## 14.2. UN proper shipping name

See corresponding entries for "UN proper shipping name" for the respective regulations in the tables above.

## 14.3. Transport hazard class(es)

See corresponding entries for "Transport hazard class(es)" for the respective regulations in the tables above.

## 14.4. Packing group

See corresponding entries for "Packing group" for the respective regulations in the tables above.

#### 14.5. Environmental hazards

See corresponding entries for "Environmental hazards" for the respective regulations in the tables above.

## 14.6. Special precautions for user

See corresponding entries for "Special precautions for user" for the respective regulations in the tables above.

## 14.7. Maritime transport in bulk according to IMO instruments

Regulation: IBC-Code

Product name: Isobutyl alcohol

Pollution category: Z Ship Type: 3

## **SECTION 15: Regulatory Information**

# 15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

Prohibitions, Restrictions and Authorizations

Annex XVII of Regulation (EC) No 1907/2006: Number on List: 40, 3, 75

Directive 2012/18/EU - Control of Major Accident Hazards involving dangerous substances (EU):

List entry in regulation: P5a List entry in regulation: P5b List entry in regulation: P5c

Date / Revised: 11.09.2023 Version: 5.0
Date previous version: 14.11.2022 Previous version: 4.0

Date / First version: 05.06.2014

Product: ISOBUTANOL

(ID no. 30034839/SDS\_GEN\_RO/EN)

Date of print 21.10.2025

If other regulatory information applies that is not already provided elsewhere in this safety data sheet, then it is described in this subsection.

## 15.2. Chemical Safety Assessment

Chemical Safety Assessment performed

## **SECTION 16: Other Information**

Assessment of the hazard classes according to UN GHS criteria (most recent version)

Flam. Liq. 3 Eye Dam./Irrit. 1

STOT SE 3 (irritating to respiratory system)

Skin Corr./Irrit. 2

STOT SE 3 (Vapours may cause drowsiness and dizziness.)

Acute Tox. 5 (oral) Acute Tox. 5 (dermal)

Asp. Tox. 2

## Full text of the classifications, including the hazard classes and the hazard statements, if mentioned

in section 2 or 3:

Flam. Liq. Flammable liquids
Skin Corr./Irrit. Skin corrosion/irritation

Eye Dam./Irrit. Serious eye damage/eye irritation

STOT SE Specific target organ toxicity — single exposure

Acute Tox. Acute toxicity

H226 Flammable liquid and vapour.
H318 Causes serious eye damage.
H315 Causes skin irritation.

H336 May cause drowsiness or dizziness.
H335 May cause respiratory irritation.

H302 Harmful if swallowed.

H225 Highly flammable liquid and vapour.

#### Abbreviations

ADR = The European Agreement concerning the International Carriage of Dangerous Goods by Road. ADN = The European Agreement concerning the International Carriage of Dangerous Goods by Inland waterways. ATE = Acute Toxicity Estimates. CAO = Cargo Aircraft Only. CAS = Chemical Abstract Service. CLP = Classification, Labelling and Packaging of substances and mixtures. DIN = German national organization for standardization. DNEL = Derived No Effect Level. EC50 = Effective concentration median for 50% of the population. EC = European Community. EN = European Standards. IARC = International Agency for Research on Cancer. IATA = International Air Transport Association. IBC-Code = Internediate Bulk Container code. IMDG = International Maritime Dangerous Goods Code. ISO = International Organization for Standardization. STEL = Short-Term Exposure Limit. LC50 = Lethal concentration median for 50% of the population. LD50 = Lethal dose median for 50% of the population. TLV = Threshold Limit Value. MARPOL = The International Convention for the Prevention of Pollution

to Regulation (EC) No 1907/2006. Date / Revised: 11.09.2023

Version: 5.0 Previous version: 4.0

Date previous version: 14.11.2022 Date / First version: 05.06.2014

Product: ISOBUTANOL

(ID no. 30034839/SDS\_GEN\_RO/EN)

Date of print 21.10.2025

from Ships. NEN = Dutch Norm. NOEC = No Observed Effect Concentration. OEL = Occupational Exposure Limit. OECD = Organization for Economic Cooperation and Development. PBT = Persistent, Bioaccumulative and Toxic. PNEC = Predicted No Effect Level. PPM = Parts per million. RID = The European Agreement concerning the International Carriage of Dangerous Goods by Rail. TWA = Time Weight Average. UN-number = UN number at transport. vPvB = very Persistent and very Bioaccumulative.

The data contained in this safety data sheet are based on our current knowledge and experience and describe the product only with regard to safety requirements. This safety data sheet is neither a Certificate of Analysis (CoA) nor technical data sheet and shall not be mistaken for a specification agreement. Identified uses in this safety data sheet do neither represent an agreement on the corresponding contractual quality of the substance/mixture nor a contractually designated use. It is the responsibility of the recipient of the product to ensure any proprietary rights and existing laws and legislation are observed.

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Date / Revised: 11.09.2023 Version: 5.0
Date previous version: 14.11.2022 Previous version: 4.0

Date / First version: 05.06.2014

Product: ISOBUTANOL

(ID no. 30034839/SDS\_GEN\_RO/EN)

Date of print 21.10.2025

## **Annex: Exposure Scenarios**

#### Index

**1.** Distribution of substance, (use in industrial settings) ERC4, ERC6a, ERC7; PROC8a, PROC8b, PROC9

- **2.** Distribution of substance, (use in professional settings) ERC8a, ERC8d; PROC8a, PROC8b, PROC9
- 3. Formulation

ERC2; PROC1, PROC2, PROC3, PROC4, PROC5, PROC8a, PROC8b, PROC9, PROC15

4. Production

ERC1; PROC1, PROC2, PROC3, PROC4, PROC8a, PROC8b, PROC9, PROC15

- **5.** Use as a Process chemical ERC4; PROC1, PROC2, PROC3, PROC4
- **6.** Use as an intermediate ERC6a; PROC1, PROC2, PROC3, PROC4
- **7.** Use as co-formulant in Plant protection products, (consumer use) ERC8a, ERC8d; PC27
- **8.** Use as co-formulant in Plant protection products, (use in professional settings) ERC8a, ERC8d; PROC11
- **9.** Use in Cleaning Agents, (consumer use) ERC8a, ERC8d; PC4, PC9a, PC9c, PC24, PC35, PC38
- **10.**Use in Cleaning Agents, (use in industrial settings) ERC4; PROC7, PROC10, PROC13
- **11.**Use in Cleaning Agents, (use in professional settings) ERC8a, ERC8d; PROC10, PROC11, PROC13, PROC19
- **12.**Use in Coatings, Use in Paints, Use in Printing inks, Use in Adhesives, (consumer use) ERC8a, ERC8d; PC1, PC4, PC9a, PC9c, PC15, PC18, PC23, PC24, PC31
- **13.**Use in Coatings, Use in Paints, Use in Printing inks, Use in Adhesives, (use in industrial settings) ERC4; PROC7, PROC10, PROC13
- **14.**Use in Coatings, Use in Paints, Use in Printing inks, Use in Adhesives, (use in professional settings) ERC8a, ERC8d; PROC10, PROC11, PROC13, PROC19
- **15.**Use in laboratories, (use in industrial settings) ERC4, ERC6a, ERC7; PROC15

Page: 21/131

BASF safety data sheet. This is a translation of the country-specific safety data sheet into a language other than that required by law. This document does not replace the safety data sheet provided according

to Regulation (EC) No 1907/2006.

Date / Revised: 11.09.2023 Version: 5.0
Date previous version: 14.11.2022 Previous version: 4.0

Date / First version: 05.06.2014

Product: ISOBUTANOL

(ID no. 30034839/SDS\_GEN\_RO/EN)

Date of print 21.10.2025

16.Use in laboratories, (use in professional settings)

ERC8a; PROC15

17. Use in Lubricants, (consumer use)

ERC8a, ERC8d, ERC9a, ERC9b; PC1, PC24, PC31, PC35

18. Use in Lubricants, (use in industrial settings)

ERC4, ERC7; PROC7, PROC10, PROC13, PROC17, PROC18

19. Use in Lubricants, (use in professional settings)

ERC8a, ERC8d, ERC9a, ERC9b; PROC10, PROC11, PROC13, PROC17, PROC18, PROC20

**20.**Use in Metal working fluids / rolling oils, (use in industrial settings)

ERC4; PROC7, PROC10, PROC13, PROC17

21.Use in Metal working fluids / rolling oils, (use in professional settings)

ERC8a; PROC10, PROC11, PROC13, PROC17

22.Use in Personal care products

ERC8a; PC28, PC39

\* \* \* \* \* \* \* \* \* \* \* \* \* \* \*

#### 1. Short title of exposure scenario

Distribution of substance, (use in industrial settings) ERC4, ERC6a, ERC7; PROC8a, PROC8b, PROC9

## Control of exposure and risk management measures

| Contributing exposure scenario |   |
|--------------------------------|---|
| Use descriptors covered        | ERC4: Use of non-reactive processing aid at industrial site (no inclusion into or onto article) As no environmental hazard was identified no environmental-related exposure assessment and risk characterization was performed. |
| Operational conditions         |   |

| Contributing exposure scenario |  |
|--------------------------------|--|
| Use descriptors covered        | ERC6a: Use of intermediate As no environmental hazard was identified no environmental-related exposure assessment and risk characterization was performed. |
| Operational conditions         |  |

| Contributing exposure scenario |  |
|--------------------------------|--|
| Use descriptors covered        | ERC7: Use of functional fluid at industrial site |

to Regulation (EC) No 1907/2006.

Date / Revised: 11.09.2023 Version: 5.0
Date previous version: 14.11.2022 Previous version: 4.0

Date / First version: 05.06.2014 Product: **ISOBUTANOL** 

(ID no. 30034839/SDS\_GEN\_RO/EN)

|                        | As no environmental hazard was identified no environmental-related exposure assessment and risk characterization was performed. |
|------------------------|---|
| Operational conditions |   |

| Contributing exposure scenario  |  |
|---|--|
| Use descriptors covered   | PROC8a: Transfer of substance or mixture (charging and discharging) at non-dedicated facilities Use domain: industrial |
| Operational conditions  |  |
| Concentration of the substance  | 2-methylpropan-1-ol<br>Content: >= 0 % - <= 100 %  |
| Physical state  | liquid   |
| Vapour pressure of the substance during use   | 1600 Pa  |
| Process temperature   | 20 °C  |
| Duration and Frequency of activity  | 480 min 5 days per week  |
| Indoor/Outdoor  | Indoor   |
| Risk Management Measures  |  |
| Ensure minimization of manual phases Avoid frequent and direct contact with substance. Supervision in place to check that the RMMs in place are being used correctly and OCs followed. Avoid splashing. |  |
| Wear suitable working clothes.  |  |
| Use suitable eye protection.  |  |
| Use suitable chemically resistant gloves.   |  |
| Exposure estimate and reference to i  | ts source  |
| Assessment method   | EASY TRA v4.2, ECETOC TRA v3.0, Worker   |
|   | Worker - inhalation, long-term - local   |
| Exposure estimate   | 154,42 mg/m³   |
| Risk Characterization Ratio (RCR)   | 0,498129   |
| Assessment method   | Qualitative assessment Worker - dermal   |
| Guidance to Downstream Users  |  |
| For scaling see: http://www.ecetoc.org/t  | ra   |

| Contributing exposure scenario |  |
|--------------------------------|--|
| Use descriptors covered        | PROC8b: Transfer of substance or mixture (charging and discharging) at dedicated facilities Use domain: industrial |

to Regulation (EC) No 1907/2006.

Date / Revised: 11.09.2023 Version: 5.0
Date previous version: 14.11.2022 Previous version: 4.0

Date / First version: 05.06.2014 Product: **ISOBUTANOL** 

(ID no. 30034839/SDS\_GEN\_RO/EN)

| Operational conditions                        |  |  |
|---|--|--|
|   | 2-methylpropan-1-ol                    |  |
| Concentration of the substance                | Content: >= 0 % - <= 100 %             |  |
|   |  |  |
| Physical state                                | liquid                                 |  |
| Vapour pressure of the substance              | 1600 Pa                                |  |
| during use                                    | 00.00                                  |  |
| Process temperature                           | 20 °C                                  |  |
|   | 480 min 5 days per week                |  |
| Duration and Frequency of activity            | 400 min 3 days per week                |  |
| Indoor/Outdoor                                | Indoor                                 |  |
| Risk Management Measures                      |  |  |
| Ensure minimization of manual                 |  |  |
| phases Avoid frequent and direct              |  |  |
| contact with substance. Supervision in        |  |  |
| place to check that the RMMs in place         |  |  |
| are being used correctly and OCs              |  |  |
| followed. Avoid splashing.                    |  |  |
| Wear suitable working clothes.                |  |  |
| Use suitable eye protection.                  |  |  |
| Use suitable chemically resistant             |  |  |
| gloves.                                       |  |  |
| Exposure estimate and reference to its source |  |  |
| Assessment method                             | EASY TRA v4.2, ECETOC TRA v3.0, Worker |  |
|   | Worker - inhalation, long-term - local |  |
| Exposure estimate                             | 77,21 mg/m³                            |  |
| Risk Characterization Ratio (RCR)             | 0,249065                               |  |
| Assessment method                             | Qualitative assessment                 |  |
|   | Worker - dermal                        |  |
| Guidance to Downstream Users                  |  |  |
| For scaling see: http://www.ecetoc.org/t      | ra                                     |  |

| Contributing exposure scenario              |  |
|---|--|
| Use descriptors covered                     | PROC9: Transfer of substance or preparation into small containers (dedicated filling line, including weighing). Use domain: industrial |
| Operational conditions                      |  |
| Concentration of the substance              | 2-methylpropan-1-ol<br>Content: >= 0 % - <= 100 %  |
| Physical state                              | liquid   |
| Vapour pressure of the substance during use | 1600 Pa  |
| Process temperature                         | 20 °C  |

to Regulation (EC) No 1907/2006.

Date / Revised: 11.09.2023 Version: 5.0
Date previous version: 14.11.2022 Previous version: 4.0

Date / First version: 05.06.2014

Product: ISOBUTANOL

(ID no. 30034839/SDS\_GEN\_RO/EN)

Date of print 21.10.2025

| Duration and Frequency of activity            | 480 min 5 days per week                |
|---|--|
| Indoor/Outdoor                                | Indoor                                 |
| Risk Management Measures                      |  |
| Ensure minimization of manual                 |  |
| phases Avoid frequent and direct              |  |
| contact with substance. Supervision in        |  |
| place to check that the RMMs in place         |  |
| are being used correctly and OCs              |  |
| followed. Avoid splashing.                    |  |
| Wear suitable working clothes.                |  |
| Use suitable eye protection.                  |  |
| Use suitable chemically resistant             |  |
| gloves.                                       |  |
| Exposure estimate and reference to its source |  |
| Assessment method                             | EASY TRA v4.2, ECETOC TRA v3.0, Worker |
|   | Worker - inhalation, long-term - local |
| Exposure estimate                             | 154,42 mg/m³                           |
| Risk Characterization Ratio (RCR)             | 0,498129                               |
| Assessment method                             | Qualitative assessment                 |
|   | Worker - dermal                        |
| Guidance to Downstream Users                  |  |
| For scaling see: http://www.ecetoc.org/t      | ra                                     |

\* \* \* \* \* \* \* \* \* \* \* \* \* \* \* \*

## 2. Short title of exposure scenario

Distribution of substance, (use in professional settings) ERC8a, ERC8d; PROC8a, PROC8b, PROC9

## Control of exposure and risk management measures

| Contributing exposure scenario |  |
|--------------------------------|--|
| Use descriptors covered        | ERC8a: Widespread use of non-reactive processing aid (no inclusion into or onto article, indoor) As no environmental hazard was identified no environmental-related exposure assessment and risk characterization was performed. |
| Operational conditions         |  |

| Contributing exposure scenario |  |
|--------------------------------|--|
| Use descriptors covered        | ERC8d: Widespread use of non-reactive processing aid (no inclusion into or onto article, outdoor) As no environmental hazard was identified no |
|                                | environmental-related exposure assessment and risk characterization was performed.   |

to Regulation (EC) No 1907/2006.

Date / Revised: 11.09.2023 Version: 5.0
Date previous version: 14.11.2022 Previous version: 4.0

Date / First version: 05.06.2014

Product: ISOBUTANOL

(ID no. 30034839/SDS\_GEN\_RO/EN)

| Operational conditions |  |
|------------------------|--|

| Contributing exposure scenario  |  |
|---|--|
| Use descriptors covered   | PROC8a: Transfer of substance or mixture (charging and discharging) at non-dedicated facilities Use domain: professional |
| Operational conditions  |  |
| Concentration of the substance  | 2-methylpropan-1-ol<br>Content: >= 0 % - <= 100 %  |
| Physical state  | liquid   |
| Vapour pressure of the substance during use   | 1600 Pa  |
| Process temperature   | 20 °C  |
| Duration and Frequency of activity  | 480 min 5 days per week  |
| Indoor/Outdoor  | Indoor   |
| Risk Management Measures  |  |
| Provide a good standard of general ventilation (not less than 3 - 5 air changes per hour)   | Effectiveness: 30 %  |
| Ensure minimization of manual phases Avoid frequent and direct contact with substance. Supervision in place to check that the RMMs in place are being used correctly and OCs followed. Avoid splashing. |  |
| Wear suitable working clothes.  |  |
| Use suitable eye protection.  |  |
| Use suitable chemically resistant gloves.   |  |
| Exposure estimate and reference to its source   |  |
| Assessment method   | EASY TRA v4.2, ECETOC TRA v3.0, Worker  Worker - inhalation, long-term - local   |
| Exposure estimate   | 216,188 mg/m³  |
| Risk Characterization Ratio (RCR)   | 0,697381   |
| Assessment method   | Qualitative assessment   |
|   | Worker - dermal  |
| Guidance to Downstream Users  |  |
| For scaling see: http://www.ecetoc.org/t  | ra   |

| Contributing exposure scenario |  |
|--------------------------------|--|
| Use descriptors covered        | PROC8b: Transfer of substance or mixture (charging and discharging) at dedicated facilities Use domain: professional |

to Regulation (EC) No 1907/2006.

Date / Revised: 11.09.2023 Version: 5.0
Date previous version: 14.11.2022 Previous version: 4.0

Date / First version: 05.06.2014 Product: **ISOBUTANOL** 

(ID no. 30034839/SDS\_GEN\_RO/EN)

| Operational conditions                        |  |  |
|---|--|--|
|   | 2-methylpropan-1-ol                    |  |
| Concentration of the substance                | Content: >= 0 % - <= 100 %             |  |
| BL : L :                                      |  |  |
| Physical state                                | liquid                                 |  |
| Vapour pressure of the substance during use   | 1600 Pa                                |  |
| Process temperature                           | 20 °C                                  |  |
| Duration and Frequency of activity            | 480 min 5 days per week                |  |
| Indoor/Outdoor                                | Indoor                                 |  |
| Risk Management Measures                      |  |  |
| Ensure minimization of manual                 |  |  |
| phases Avoid frequent and direct              |  |  |
| contact with substance. Supervision in        |  |  |
| place to check that the RMMs in place         |  |  |
| are being used correctly and OCs              |  |  |
| followed. Avoid splashing.                    |  |  |
| Wear suitable working clothes.                |  |  |
| Use suitable eye protection.                  |  |  |
| Use suitable chemically resistant             |  |  |
| gloves.                                       |  |  |
| Exposure estimate and reference to its source |  |  |
| Assessment method                             | EASY TRA v4.2, ECETOC TRA v3.0, Worker |  |
|   | Worker - inhalation, long-term - local |  |
| Exposure estimate                             | 154,42 mg/m³                           |  |
| Risk Characterization Ratio (RCR)             | 0,498129                               |  |
| Assessment method                             | Qualitative assessment                 |  |
|   | Worker - dermal                        |  |
| Guidance to Downstream Users                  |  |  |
| For scaling see: http://www.ecetoc.org/t      | ra                                     |  |

| Contributing exposure scenario              |  |  |  |
|---|--|--|--|
| Use descriptors covered                     | PROC9: Transfer of substance or preparation into small containers (dedicated filling line, including weighing). Use domain: professional |  |  |
| Operational conditions                      | Operational conditions   |  |  |
| Concentration of the substance              | 2-methylpropan-1-ol<br>Content: >= 0 % - <= 100 %  |  |  |
| Physical state                              | liquid   |  |  |
| Vapour pressure of the substance during use | 1600 Pa  |  |  |
| Process temperature                         | 20 °C  |  |  |

to Regulation (EC) No 1907/2006.

Date / Revised: 11.09.2023 Version: 5.0
Date previous version: 14.11.2022 Previous version: 4.0

Date / First version: 05.06.2014

Product: ISOBUTANOL

(ID no. 30034839/SDS\_GEN\_RO/EN)

Date of print 21.10.2025

| Duration and Frequency of activity       | 480 min 5 days per week                |
|--|--|
| Indoor/Outdoor                           | Indoor                                 |
| Risk Management Measures                 |  |
| Provide a good standard of general       |  |
| ventilation (not less than 3 - 5 air     | Effectiveness: 30 %                    |
| changes per hour)                        |  |
| Ensure minimization of manual            |  |
| phases Avoid frequent and direct         |  |
| contact with substance. Supervision in   |  |
| place to check that the RMMs in place    |  |
| are being used correctly and OCs         |  |
| followed. Avoid splashing.               |  |
| Wear suitable working clothes.           |  |
| Use suitable eye protection.             |  |
| Use suitable chemically resistant        |  |
| gloves.                                  |  |
| Exposure estimate and reference to i     |  |
| Assessment method                        | EASY TRA v4.2, ECETOC TRA v3.0, Worker |
|  | Worker - inhalation, long-term - local |
| Exposure estimate                        | 216,188 mg/m³                          |
| Risk Characterization Ratio (RCR)        | 0,697381                               |
| Assessment method                        | Qualitative assessment                 |
|  | Worker - dermal                        |
| Guidance to Downstream Users             |  |
| For scaling see: http://www.ecetoc.org/t | ra                                     |

\* \* \* \* \* \* \* \* \* \* \* \* \* \* \* \*

## 3. Short title of exposure scenario

Formulation

ERC2; PROC1, PROC2, PROC3, PROC4, PROC5, PROC8a, PROC8b, PROC9, PROC15

## Control of exposure and risk management measures

| Contributing exposure scenario |  |
|--------------------------------|--|
| Use descriptors covered        | ERC2: Formulation into mixture As no environmental hazard was identified no environmental-related exposure assessment and risk characterization was performed. |
| Operational conditions         |  |

| Contributing exposure scenario |  |
|--------------------------------|--|
| Use descriptors covered        | PROC1: Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions. |

to Regulation (EC) No 1907/2006.

Date / Revised: 11.09.2023 Version: 5.0
Date previous version: 14.11.2022 Previous version: 4.0

Date / First version: 05.06.2014

Product: **ISOBUTANOL** 

(ID no. 30034839/SDS\_GEN\_RO/EN)

|   | Use domain: industrial   |
|---|--|
| Operational conditions  |  |
| Concentration of the substance  | 2-methylpropan-1-ol<br>Content: >= 0 % - <= 100 %  |
| Physical state  | liquid   |
| Vapour pressure of the substance during use   | 1600 Pa  |
| Process temperature   | 20 °C  |
| Duration and Frequency of activity  | 480 min 5 days per week  |
| Indoor/Outdoor  | Indoor   |
| Risk Management Measures  |  |
| Ensure minimization of manual phases Avoid frequent and direct contact with substance. Supervision in place to check that the RMMs in place are being used correctly and OCs followed. Avoid splashing.  Wear suitable working clothes.  Use suitable eye protection.  Use suitable chemically resistant gloves.  Exposure estimate and reference to it Assessment method | its source EASY TRA v4.2, ECETOC TRA v3.0, Worker Worker - inhalation, long-term - local |
| Exposure estimate   | 0,0309 mg/m <sup>3</sup>   |
| Risk Characterization Ratio (RCR)   | 0.0001   |
| Assessment method   | Qualitative assessment   |
|   | Worker - dermal  |
| Guidance to Downstream Users  |  |
| For scaling see: http://www.ecetoc.org/tra  |  |

| Contributing exposure scenario   |  |
|----------------------------------|--|
| Use descriptors covered          | PROC2: Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions Use domain: industrial |
| Operational conditions           |  |
|                                  | 2-methylpropan-1-ol  |
| Concentration of the substance   | Content: >= 0 % - <= 100 %   |
|                                  |  |
| Physical state                   | liquid   |
| Vapour pressure of the substance | 1600 Pa  |
| during use                       |  |

to Regulation (EC) No 1907/2006.

Date / Revised: 11.09.2023 Version: 5.0
Date previous version: 14.11.2022 Previous version: 4.0

Date / First version: 05.06.2014 Product: **ISOBUTANOL** 

(ID no. 30034839/SDS\_GEN\_RO/EN)

| Process temperature  | 20 °C                                  |
|--|--|
| Duration and Frequency of activity   | 480 min 5 days per week                |
| Indoor/Outdoor   | Indoor                                 |
| Risk Management Measures   |  |
| Ensure minimization of manual phases Avoid frequent and direct               |  |
| contact with substance. Supervision in place to check that the RMMs in place |  |
| are being used correctly and OCs followed. Avoid splashing.                  |  |
| Wear suitable working clothes.   |  |
| Use suitable eye protection.   |  |
| Use suitable chemically resistant  |  |
| gloves.  |  |
| Exposure estimate and reference to its source                                |  |
| Assessment method  | EASY TRA v4.2, ECETOC TRA v3.0, Worker |
|  | Worker - inhalation, long-term - local |
| Exposure estimate  | 15,442 mg/m³                           |
| Risk Characterization Ratio (RCR)  | 0,049813                               |
| Assessment method  | Qualitative assessment                 |
|  | Worker - dermal                        |
| Guidance to Downstream Users   |  |
| For scaling see: http://www.ecetoc.org/t                                     | ra                                     |

| Contributing exposure scenario                                 |  |
|--|--|
| Use descriptors covered  | PROC3: Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition Use domain: industrial |
| Operational conditions   |  |
| Concentration of the substance                                 | 2-methylpropan-1-ol<br>Content: >= 0 % - <= 100 %  |
| Physical state   | liquid   |
| Vapour pressure of the substance during use                    | 1600 Pa  |
| Process temperature  | 20 °C  |
| Duration and Frequency of activity                             | 480 min 5 days per week  |
| Indoor/Outdoor   | Indoor   |
| Risk Management Measures                                       |  |
| Ensure minimization of manual phases Avoid frequent and direct |  |

to Regulation (EC) No 1907/2006.

Date / Revised: 11.09.2023 Version: 5.0
Date previous version: 14.11.2022 Previous version: 4.0

Date / First version: 05.06.2014 Product: **ISOBUTANOL** 

(ID no. 30034839/SDS\_GEN\_RO/EN)

| contact with substance. Supervision in        |  |  |
|---|--|--|
| place to check that the RMMs in place         |  |  |
| are being used correctly and OCs              |  |  |
| followed. Avoid splashing.                    |  |  |
|   |  |  |
| Wear suitable working clothes.                |  |  |
| Use suitable eye protection.                  |  |  |
| Use suitable chemically resistant             |  |  |
| gloves.                                       |  |  |
| Exposure estimate and reference to its source |  |  |
| Assessment method                             | EASY TRA v4.2, ECETOC TRA v3.0, Worker |  |
|   | Worker - inhalation, long-term - local |  |
| Exposure estimate                             | 30,884 mg/m³                           |  |
| Risk Characterization Ratio (RCR)             | 0,099626                               |  |
| Assessment method                             | Qualitative assessment                 |  |
|   | Worker - dermal                        |  |
| Guidance to Downstream Users                  |  |  |
| For scaling see: http://www.ecetoc.org/tra    |  |  |

| Contributing exposure scenario  |   |
|---|---|
| Use descriptors covered   | PROC4: Chemical production where opportunity for exposure arises Use domain: industrial |
| Operational conditions  |   |
| Concentration of the substance  | 2-methylpropan-1-ol<br>Content: >= 0 % - <= 100 %                                       |
| Physical state  | liquid  |
| Vapour pressure of the substance during use   | 1600 Pa   |
| Process temperature   | 20 °C   |
| Duration and Frequency of activity  | 480 min 5 days per week   |
| Indoor/Outdoor  | Indoor  |
| Risk Management Measures  |   |
| Ensure minimization of manual phases Avoid frequent and direct contact with substance. Supervision in place to check that the RMMs in place are being used correctly and OCs followed. Avoid splashing.  Wear suitable working clothes. |   |
| Use suitable eye protection.  |   |
| Use suitable chemically resistant gloves.   |   |
| Exposure estimate and reference to i  |   |
| Assessment method   | EASY TRA v4.2, ECETOC TRA v3.0, Worker  |

to Regulation (EC) No 1907/2006.

Date / Revised: 11.09.2023 Version: 5.0
Date previous version: 14.11.2022 Previous version: 4.0

Date / First version: 05.06.2014

Product: ISOBUTANOL

(ID no. 30034839/SDS\_GEN\_RO/EN)

|  | Worker - inhalation, long-term - local |
|--|--|
| Exposure estimate                          | 61,768 mg/m <sup>3</sup>               |
| Risk Characterization Ratio (RCR)          | 0,199252                               |
| Assessment method                          | Qualitative assessment                 |
| Worker - dermal                            |  |
| Guidance to Downstream Users               |  |
| For scaling see: http://www.ecetoc.org/tra |  |

| Contributing exposure scenario              |   |
|---|---|
| Use descriptors covered                     | PROC5: Mixing or blending in batch processes Use domain: industrial |
| Operational conditions                      |   |
| Concentration of the substance              | 2-methylpropan-1-ol<br>Content: >= 0 % - <= 100 %                   |
| Physical state                              | liquid  |
| Vapour pressure of the substance during use | 1600 Pa   |
| Process temperature                         | 20 °C   |
| Duration and Frequency of activity          | 480 min 5 days per week   |
| Indoor/Outdoor                              | Indoor  |
| Risk Management Measures                    |   |
| Ensure minimization of manual               |   |
| phases Avoid frequent and direct            |   |
| contact with substance. Supervision in      |   |
| place to check that the RMMs in place       |   |
| are being used correctly and OCs            |   |
| followed. Avoid splashing.                  |   |
| Wear suitable working clothes.              |   |
| Use suitable eye protection.                |   |
| Use suitable chemically resistant           |   |
| gloves.                                     |   |
| Exposure estimate and reference to          | its source  |
| Assessment method                           | EASY TRA v4.2, ECETOC TRA v3.0, Worker                              |
|   | Worker - inhalation, long-term - local                              |
| Exposure estimate                           | 154,42 mg/m³  |
| Risk Characterization Ratio (RCR)           | 0,498129  |
| Assessment method                           | Qualitative assessment  |
|   | Worker - dermal   |
| Guidance to Downstream Users                |   |
| For scaling see: http://www.ecetoc.org/t    | ra  |

| Contributing exposure scenario |  |
|--------------------------------|--|
| Use descriptors covered        | PROC8a: Transfer of substance or mixture (charging and |
|                                | discharging) at non-dedicated facilities               |

to Regulation (EC) No 1907/2006.

Date / Revised: 11.09.2023 Version: 5.0
Date previous version: 14.11.2022 Previous version: 4.0

Date / First version: 05.06.2014 Product: **ISOBUTANOL** 

(ID no. 30034839/SDS\_GEN\_RO/EN)

|   | Use domain: industrial                 |  |
|---|--|--|
| Operational conditions                        | <u>I</u>                               |  |
| •   | 2-methylpropan-1-ol                    |  |
| Concentration of the substance                | Content: >= 0 % - <= 100 %             |  |
| Physical state                                | liquid                                 |  |
| Vapour pressure of the substance during use   | 1600 Pa                                |  |
| Process temperature                           | 20 °C                                  |  |
| Duration and Frequency of activity            | 480 min 5 days per week                |  |
| Indoor/Outdoor                                | Indoor                                 |  |
| Risk Management Measures                      |  |  |
| Ensure minimization of manual                 |  |  |
| phases Avoid frequent and direct              |  |  |
| contact with substance. Supervision in        |  |  |
| place to check that the RMMs in place         |  |  |
| are being used correctly and OCs              |  |  |
| followed. Avoid splashing.                    |  |  |
| Wear suitable working clothes.                |  |  |
| Use suitable eye protection.                  |  |  |
| Use suitable chemically resistant             |  |  |
| gloves.                                       |  |  |
| Exposure estimate and reference to its source |  |  |
| Assessment method                             | EASY TRA v4.2, ECETOC TRA v3.0, Worker |  |
|   | Worker - inhalation, long-term - local |  |
| Exposure estimate                             | 154,42 mg/m³                           |  |
| Risk Characterization Ratio (RCR)             | 0,498129                               |  |
| Assessment method                             | Qualitative assessment                 |  |
|   | Worker - dermal                        |  |
| Guidance to Downstream Users                  |  |  |
| For scaling see: http://www.ecetoc.org/t      | ra                                     |  |

| Contributing exposure scenario              |  |
|---|--|
| Use descriptors covered                     | PROC8b: Transfer of substance or mixture (charging and discharging) at dedicated facilities Use domain: industrial |
| Operational conditions                      |  |
| Concentration of the substance              | 2-methylpropan-1-ol<br>Content: >= 0 % - <= 100 %  |
| Physical state                              | liquid   |
| Vapour pressure of the substance during use | 1600 Pa  |
| Process temperature                         | 20 °C  |

to Regulation (EC) No 1907/2006.

Date / Revised: 11.09.2023 Version: 5.0
Date previous version: 14.11.2022 Previous version: 4.0

Date / First version: 05.06.2014 Product: **ISOBUTANOL** 

(ID no. 30034839/SDS\_GEN\_RO/EN)

| Duration and Frequency of activity         | 480 min 5 days per week                       |  |  |
|--|---|--|--|
| Indoor/Outdoor                             | Indoor  |  |  |
| Risk Management Measures                   |   |  |  |
| Ensure minimization of manual              |   |  |  |
| phases Avoid frequent and direct           |   |  |  |
| contact with substance. Supervision in     |   |  |  |
| place to check that the RMMs in place      |   |  |  |
| are being used correctly and OCs           |   |  |  |
| followed. Avoid splashing.                 |   |  |  |
| Wear suitable working clothes.             |   |  |  |
| Use suitable eye protection.               |   |  |  |
| Use suitable chemically resistant          |   |  |  |
| gloves.                                    |   |  |  |
| Exposure estimate and reference to i       | Exposure estimate and reference to its source |  |  |
| Assessment method                          | EASY TRA v4.2, ECETOC TRA v3.0, Worker        |  |  |
|  | Worker - inhalation, long-term - local        |  |  |
| Exposure estimate                          | 77,21 mg/m³                                   |  |  |
| Risk Characterization Ratio (RCR)          | 0,249065                                      |  |  |
| Assessment method                          | Qualitative assessment                        |  |  |
|  | Worker - dermal                               |  |  |
| Guidance to Downstream Users               |   |  |  |
| For scaling see: http://www.ecetoc.org/tra |   |  |  |

| Contributing exposure scenario              |  |  |
|---|--|--|
| Use descriptors covered                     | PROC9: Transfer of substance or preparation into small containers (dedicated filling line, including weighing). Use domain: industrial |  |
| Operational conditions                      |  |  |
| Concentration of the substance              | 2-methylpropan-1-ol<br>Content: >= 0 % - <= 100 %  |  |
| Physical state                              | liquid   |  |
| Vapour pressure of the substance during use | 1600 Pa  |  |
| Process temperature                         | 20 °C  |  |
| Duration and Frequency of activity          | 480 min 5 days per week  |  |
| Indoor/Outdoor                              | Indoor   |  |
| Risk Management Measures                    |  |  |
| Ensure minimization of manual               |  |  |
| phases Avoid frequent and direct            |  |  |
| contact with substance. Supervision in      |  |  |
| place to check that the RMMs in place       |  |  |
| are being used correctly and OCs            |  |  |

to Regulation (EC) No 1907/2006.

Date / Revised: 11.09.2023 Version: 5.0
Date previous version: 14.11.2022 Previous version: 4.0

Date / First version: 05.06.2014

Product: ISOBUTANOL

(ID no. 30034839/SDS\_GEN\_RO/EN)

| followed. Avoid splashing.                    |  |
|---|--|
| Wear suitable working clothes.                |  |
| Use suitable eye protection.                  |  |
| Use suitable chemically resistant             |  |
| gloves.                                       |  |
| Exposure estimate and reference to its source |  |
| Assessment method                             | EASY TRA v4.2, ECETOC TRA v3.0, Worker |
|   | Worker - inhalation, long-term - local |
| Exposure estimate                             | 154,42 mg/m³                           |
| Risk Characterization Ratio (RCR)             | 0,498129                               |
| Assessment method                             | Qualitative assessment                 |
|   | Worker - dermal                        |
| Guidance to Downstream Users                  |  |
| For scaling see: http://www.ecetoc.org/tra    |  |

| Contributing exposure scenario                |  |
|---|--|
|   | PROC15: Use a laboratory reagent.      |
| Use descriptors covered                       | Use domain: industrial                 |
|   |  |
| Operational conditions                        |  |
|   | 2-methylpropan-1-ol                    |
| Concentration of the substance                | Content: >= 0 % - <= 100 %             |
| Physical state                                | liquid                                 |
| Vapour pressure of the substance              | 1600 Pa                                |
| during use                                    | 10001 a                                |
|   | 20 °C                                  |
| Process temperature                           |  |
| Business I Francisco de Carillia              | 480 min 5 days per week                |
| Duration and Frequency of activity            | , '                                    |
| Indoor/Outdoor                                | Indoor                                 |
| Risk Management Measures                      |  |
| Ensure minimization of manual                 |  |
| phases Avoid frequent and direct              |  |
| contact with substance. Supervision in        |  |
| place to check that the RMMs in place         |  |
| are being used correctly and OCs              |  |
| followed. Avoid splashing.                    |  |
| Wear suitable working clothes.                |  |
| Use suitable eye protection.                  |  |
| Use suitable chemically resistant             |  |
| gloves.                                       |  |
| Exposure estimate and reference to its source |  |
| Assessment method                             | EASY TRA v4.2, ECETOC TRA v3.0, Worker |
|   | Worker - inhalation, long-term - local |
| Exposure estimate                             | 30,884 mg/m³                           |
| Risk Characterization Ratio (RCR)             | 0,099626                               |
| Assessment method                             | Qualitative assessment                 |

to Regulation (EC) No 1907/2006.

Date / Revised: 11.09.2023 Version: 5.0
Date previous version: 14.11.2022 Previous version: 4.0

Date / First version: 05.06.2014

Product: **ISOBUTANOL** 

(ID no. 30034839/SDS\_GEN\_RO/EN)

Date of print 21.10.2025

|  | Worker - dermal |
|--|-----------------|
| Guidance to Downstream Users               |                 |
| For scaling see: http://www.ecetoc.org/tra |                 |

\* \* \* \* \* \* \* \* \* \* \* \* \* \* \* \*

## 4. Short title of exposure scenario

Production

ERC1; PROC1, PROC2, PROC3, PROC4, PROC8a, PROC8b, PROC9, PROC15

## Control of exposure and risk management measures

| Contributing exposure scenario |  |
|--------------------------------|--|
| Use descriptors covered        | ERC1: Manufacture of the substance As no environmental hazard was identified no environmental-related exposure assessment and risk characterization was performed. |
| Operational conditions         |  |

| Contributing exposure scenario                                 |  |
|--|--|
| Use descriptors covered  | PROC1: Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions.  Use domain: industrial |
| Operational conditions   |  |
| Concentration of the substance                                 | 2-methylpropan-1-ol<br>Content: >= 0 % - <= 100 %  |
| Physical state   | liquid   |
| Vapour pressure of the substance during use                    | 1600 Pa  |
| Process temperature  | 20 °C  |
| Duration and Frequency of activity                             | 480 min 5 days per week  |
| Indoor/Outdoor   | Indoor   |
| Risk Management Measures                                       |  |
| Ensure minimization of manual phases Avoid frequent and direct |  |
| contact with substance. Supervision in                         |  |
| place to check that the RMMs in place                          |  |
| are being used correctly and OCs                               |  |
| followed. Avoid splashing.                                     |  |
| Wear suitable working clothes.                                 |  |
| Use suitable eye protection.                                   |  |

to Regulation (EC) No 1907/2006.

Date / Revised: 11.09.2023 Version: 5.0
Date previous version: 14.11.2022 Previous version: 4.0

Date / First version: 05.06.2014

Product: ISOBUTANOL (ID no. 30034839/SDS\_GEN\_RO/EN)

| Use suitable chemically resistant             |  |  |
|---|--|--|
| gloves.                                       |  |  |
| Exposure estimate and reference to its source |  |  |
| Assessment method                             | EASY TRA v4.2, ECETOC TRA v3.0, Worker |  |
|   | Worker - inhalation, long-term - local |  |
| Exposure estimate                             | 0,0309 mg/m <sup>3</sup>               |  |
| Risk Characterization Ratio (RCR)             | 0,0001                                 |  |
| Assessment method                             | Qualitative assessment                 |  |
|   | Worker - dermal                        |  |
| Guidance to Downstream Users                  |  |  |
| For scaling see: http://www.ecetoc.org        | /tra                                   |  |

| Contributing exposure scenario                |  |
|---|--|
| Use descriptors covered                       | PROC2: Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions Use domain: industrial |
| Operational conditions                        | l .  |
| Concentration of the substance                | 2-methylpropan-1-ol<br>Content: >= 0 % - <= 100 %  |
| Physical state                                | liquid   |
| Vapour pressure of the substance during use   | 1600 Pa  |
| Process temperature                           | 20 °C  |
| Duration and Frequency of activity            | 480 min 5 days per week  |
| Indoor/Outdoor                                | Indoor   |
| Risk Management Measures                      |  |
| Ensure minimization of manual                 |  |
| phases Avoid frequent and direct              |  |
| contact with substance. Supervision in        |  |
| place to check that the RMMs in place         |  |
| are being used correctly and OCs              |  |
| followed. Avoid splashing.                    |  |
| Wear suitable working clothes.                |  |
| Use suitable eye protection.                  |  |
| Use suitable chemically resistant gloves.     |  |
| Exposure estimate and reference to its source |  |
| Assessment method                             | EASY TRA v4.2, ECETOC TRA v3.0, Worker   |
|   | Worker - inhalation, long-term - local   |
| Exposure estimate                             | 15,442 mg/m³   |
| Risk Characterization Ratio (RCR)             | 0,049813   |
| Assessment method                             | Qualitative assessment   |
|   | Worker - dermal  |

to Regulation (EC) No 1907/2006.

Date / Revised: 11.09.2023 Version: 5.0
Date previous version: 14.11.2022 Previous version: 4.0

Date / First version: 05.06.2014

Product: ISOBUTANOL

(ID no. 30034839/SDS\_GEN\_RO/EN)

| Guidance to Downstream Users               |  |
|--|--|
| For scaling see: http://www.ecetoc.org/tra |  |

| Contributing exposure scenario  |  |  |
|---|--|--|
| Use descriptors covered   | PROC3: Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition Use domain: industrial |  |
| Operational conditions  |  |  |
| Concentration of the substance  | 2-methylpropan-1-ol<br>Content: >= 0 % - <= 100 %  |  |
| Physical state  | liquid   |  |
| Vapour pressure of the substance during use   | 1600 Pa  |  |
| Process temperature   | 20 °C  |  |
| Duration and Frequency of activity  | 480 min 5 days per week  |  |
| Indoor/Outdoor  | Indoor   |  |
| Risk Management Measures  |  |  |
| Ensure minimization of manual phases Avoid frequent and direct contact with substance. Supervision in place to check that the RMMs in place are being used correctly and OCs followed. Avoid splashing. |  |  |
| Wear suitable working clothes.  |  |  |
| Use suitable eye protection.  |  |  |
| Use suitable chemically resistant gloves.   |  |  |
| Exposure estimate and reference to its source   |  |  |
| Assessment method   | EASY TRA v4.2, ECETOC TRA v3.0, Worker   |  |
|   | Worker - inhalation, long-term - local   |  |
| Exposure estimate   | 30,884 mg/m³   |  |
| Risk Characterization Ratio (RCR)   | 0,099626   |  |
| Assessment method   | Qualitative assessment   |  |
|   | Worker - dermal  |  |
| Guidance to Downstream Users  |  |  |
| For scaling see: http://www.ecetoc.org/t  | ra   |  |

| Contributing exposure scenario |   |
|--------------------------------|---|
| Use descriptors covered        | PROC4: Chemical production where opportunity for exposure arises Use domain: industrial |

to Regulation (EC) No 1907/2006.

Date / Revised: 11.09.2023 Version: 5.0
Date previous version: 14.11.2022 Previous version: 4.0

Date / First version: 05.06.2014 Product: **ISOBUTANOL** 

(ID no. 30034839/SDS\_GEN\_RO/EN)

| Operational conditions                        |  |  |
|---|--|--|
|   | 2-methylpropan-1-ol                    |  |
| Concentration of the substance                | Content: >= 0 % - <= 100 %             |  |
| Physical state                                | liquid                                 |  |
| Vapour pressure of the substance              | 1600 Pa                                |  |
| during use                                    | 1000 F a                               |  |
| Process temperature                           | 20 °C                                  |  |
| Duration and Frequency of activity            | 480 min 5 days per week                |  |
| Indoor/Outdoor                                | Indoor                                 |  |
| Risk Management Measures                      |  |  |
| Ensure minimization of manual                 |  |  |
| phases Avoid frequent and direct              |  |  |
| contact with substance. Supervision in        |  |  |
| place to check that the RMMs in place         |  |  |
| are being used correctly and OCs              |  |  |
| followed. Avoid splashing.                    |  |  |
| Wear suitable working clothes.                |  |  |
| Use suitable eye protection.                  |  |  |
| Use suitable chemically resistant             |  |  |
| gloves.                                       |  |  |
| Exposure estimate and reference to its source |  |  |
| Assessment method                             | EASY TRA v4.2, ECETOC TRA v3.0, Worker |  |
|   | Worker - inhalation, long-term - local |  |
| Exposure estimate                             | 61,768 mg/m³                           |  |
| Risk Characterization Ratio (RCR)             | 0,199252                               |  |
| Assessment method                             | Qualitative assessment                 |  |
|   | Worker - dermal                        |  |
| Guidance to Downstream Users                  |  |  |
| For scaling see: http://www.ecetoc.org/t      | ra                                     |  |

| Contributing exposure scenario              | Contributing exposure scenario   |  |
|---|--|--|
| Use descriptors covered                     | PROC8a: Transfer of substance or mixture (charging and discharging) at non-dedicated facilities Use domain: industrial |  |
| Operational conditions                      |  |  |
| Concentration of the substance              | 2-methylpropan-1-ol<br>Content: >= 0 % - <= 100 %  |  |
| Physical state                              | liquid   |  |
| Vapour pressure of the substance during use | 1600 Pa  |  |
| Process temperature                         | 20 °C  |  |
| Duration and Frequency of activity          | 480 min 5 days per week  |  |

to Regulation (EC) No 1907/2006.

Date / Revised: 11.09.2023 Version: 5.0
Date previous version: 14.11.2022 Previous version: 4.0

Date / First version: 05.06.2014 Product: **ISOBUTANOL** 

(ID no. 30034839/SDS\_GEN\_RO/EN)

| Indoor/Outdoor                                | Indoor                                 |
|---|--|
| Risk Management Measures                      |  |
| Ensure minimization of manual                 |  |
| phases Avoid frequent and direct              |  |
| contact with substance. Supervision in        |  |
| place to check that the RMMs in place         |  |
| are being used correctly and OCs              |  |
| followed. Avoid splashing.                    |  |
| Wear suitable working clothes.                |  |
| Use suitable eye protection.                  |  |
| Use suitable chemically resistant             |  |
| gloves.                                       |  |
| Exposure estimate and reference to its source |  |
| Assessment method                             | EASY TRA v4.2, ECETOC TRA v3.0, Worker |
|   | Worker - inhalation, long-term - local |
| Exposure estimate                             | 154,42 mg/m <sup>3</sup>               |
| Risk Characterization Ratio (RCR)             | 0,498129                               |
| Assessment method                             | Qualitative assessment                 |
|   | Worker - dermal                        |
| Guidance to Downstream Users                  |  |
| For scaling see: http://www.ecetoc.org/tra    |  |

| Contributing exposure scenario  |  |
|---|--|
| Use descriptors covered   | PROC8b: Transfer of substance or mixture (charging and discharging) at dedicated facilities Use domain: industrial |
| Operational conditions  |  |
| Concentration of the substance  | 2-methylpropan-1-ol<br>Content: >= 0 % - <= 100 %  |
| Physical state  | liquid   |
| Vapour pressure of the substance during use   | 1600 Pa  |
| Process temperature   | 20 °C  |
| Duration and Frequency of activity  | 480 min 5 days per week  |
| Indoor/Outdoor  | Indoor   |
| Risk Management Measures  |  |
| Ensure minimization of manual phases Avoid frequent and direct contact with substance. Supervision in place to check that the RMMs in place are being used correctly and OCs followed. Avoid splashing. |  |
| Wear suitable working clothes.  |  |

to Regulation (EC) No 1907/2006.

Date / Revised: 11.09.2023 Version: 5.0
Date previous version: 14.11.2022 Previous version: 4.0

Date / First version: 05.06.2014

Product: ISOBUTANOL

(ID no. 30034839/SDS\_GEN\_RO/EN)

| Use suitable eye protection.                  |  |  |
|---|--|--|
| Use suitable chemically resistant             |  |  |
| gloves.                                       |  |  |
| Exposure estimate and reference to its source |  |  |
| Assessment method                             | EASY TRA v4.2, ECETOC TRA v3.0, Worker |  |
|   | Worker - inhalation, long-term - local |  |
| Exposure estimate                             | 77,21 mg/m³                            |  |
| Risk Characterization Ratio (RCR)             | 0,249065                               |  |
| Assessment method                             | Qualitative assessment                 |  |
|   | Worker - dermal                        |  |
| Guidance to Downstream Users                  |  |  |
| For scaling see: http://www.ecetoc.org/tra    |  |  |

| Contributing exposure scenario  |  |  |
|---|--|--|
| Use descriptors covered   | PROC9: Transfer of substance or preparation into small containers (dedicated filling line, including weighing). Use domain: industrial |  |
| Operational conditions  |  |  |
| Concentration of the substance  | 2-methylpropan-1-ol<br>Content: >= 0 % - <= 100 %  |  |
| Physical state  | liquid   |  |
| Vapour pressure of the substance during use   | 1600 Pa  |  |
| Process temperature   | 20 °C  |  |
| Duration and Frequency of activity  | 480 min 5 days per week  |  |
| Indoor/Outdoor  | Indoor   |  |
| Risk Management Measures  |  |  |
| Ensure minimization of manual phases Avoid frequent and direct contact with substance. Supervision in place to check that the RMMs in place are being used correctly and OCs followed. Avoid splashing. |  |  |
| Wear suitable working clothes.  |  |  |
| Use suitable eye protection.  |  |  |
| Use suitable chemically resistant gloves.   |  |  |
| Exposure estimate and reference to its source   |  |  |
| Assessment method   | EASY TRA v4.2, ECETOC TRA v3.0, Worker   |  |
|   | Worker - inhalation, long-term - local   |  |
| Exposure estimate   | 154,42 mg/m³   |  |
| Risk Characterization Ratio (RCR)   | 0,498129   |  |
| Assessment method   | Qualitative assessment   |  |
|   | Worker - dermal  |  |

to Regulation (EC) No 1907/2006.

Date / Revised: 11.09.2023 Version: 5.0
Date previous version: 14.11.2022 Previous version: 4.0

Date / First version: 05.06.2014

Product: ISOBUTANOL

(ID no. 30034839/SDS\_GEN\_RO/EN)

Date of print 21.10.2025

| Guidance to Downstream Users               |  |
|--|--|
| For scaling see: http://www.ecetoc.org/tra |  |

| Contributing exposure scenario              |  |
|---|--|
| <u> </u>                                    | PROC15: Use a laboratory reagent.      |
| Use descriptors covered                     | Use domain: industrial                 |
| Operational conditions                      |  |
|   | 2-methylpropan-1-ol                    |
| Concentration of the substance              | Content: >= 0 % - <= 100 %             |
| Physical state                              | liquid                                 |
| Vapour pressure of the substance during use | 1600 Pa                                |
| Process temperature                         | 20 °C                                  |
| Duration and Frequency of activity          | 480 min 5 days per week                |
| Indoor/Outdoor                              | Indoor                                 |
| Risk Management Measures                    |  |
| Ensure minimization of manual               |  |
| phases Avoid frequent and direct            |  |
| contact with substance. Supervision in      |  |
| place to check that the RMMs in place       |  |
| are being used correctly and OCs            |  |
| followed. Avoid splashing.                  |  |
| Wear suitable working clothes.              |  |
| Use suitable eye protection.                |  |
| Use suitable chemically resistant           |  |
| gloves.                                     |  |
| Exposure estimate and reference to          | its source                             |
| Assessment method                           | EASY TRA v4.2, ECETOC TRA v3.0, Worker |
|   | Worker - inhalation, long-term - local |
| Exposure estimate                           | 30,884 mg/m³                           |
| Risk Characterization Ratio (RCR)           | 0,099626                               |
| Assessment method                           | Qualitative assessment                 |
|   | Worker - dermal                        |
| Guidance to Downstream Users                | ·                                      |
| For scaling see: http://www.ecetoc.org/t    | ra                                     |

# 5. Short title of exposure scenario

Use as a Process chemical

ERC4; PROC1, PROC2, PROC3, PROC4

to Regulation (EC) No 1907/2006.

Date / Revised: 11.09.2023 Version: 5.0
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Product: ISOBUTANOL

(ID no. 30034839/SDS\_GEN\_RO/EN)

Date of print 21.10.2025

## Control of exposure and risk management measures

| Contributing exposure scenario |   |
|--------------------------------|---|
| Use descriptors covered        | ERC4: Use of non-reactive processing aid at industrial site (no inclusion into or onto article) As no environmental hazard was identified no environmental-related exposure assessment and risk characterization was performed. |
| Operational conditions         |   |

| Contributing exposure scenario  |  |
|---|--|
| Use descriptors covered   | PROC1: Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions.  Use domain: industrial |
| Operational conditions  |  |
| Concentration of the substance  | 2-methylpropan-1-ol<br>Content: >= 0 % - <= 100 %  |
| Physical state  | liquid   |
| Vapour pressure of the substance during use   | 1600 Pa  |
| Process temperature   | 20 °C  |
| Duration and Frequency of activity  | 480 min 5 days per week  |
| Indoor/Outdoor  | Indoor   |
| Risk Management Measures  |  |
| Ensure minimization of manual phases Avoid frequent and direct contact with substance. Supervision in place to check that the RMMs in place are being used correctly and OCs followed. Avoid splashing. |  |
| Wear suitable working clothes.  |  |
| Use suitable eye protection.  |  |
| Use suitable chemically resistant gloves.   |  |
| Exposure estimate and reference to  |  |
| Assessment method   | EASY TRA v4.2, ECETOC TRA v3.0, Worker  Worker - inhalation, long-term - local   |
| Exposure estimate   | 0,0309 mg/m³   |
| Risk Characterization Ratio (RCR)   | 0,0001   |
| Assessment method   | Qualitative assessment Worker - dermal   |
| Guidance to Downstream Users  | 1  |
| For scaling see: http://www.ecetoc.org/t  | ra   |

to Regulation (EC) No 1907/2006.

Date / Revised: 11.09.2023 Version: 5.0
Date previous version: 14.11.2022 Previous version: 4.0

Date / First version: 05.06.2014

Product: ISOBUTANOL

(ID no. 30034839/SDS\_GEN\_RO/EN)

| Contributing exposure scenario  |  |  |
|---|--|--|
| Use descriptors covered   | PROC2: Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions Use domain: industrial |  |
| Operational conditions  |  |  |
| Concentration of the substance  | 2-methylpropan-1-ol<br>Content: >= 0 % - <= 100 %  |  |
| Physical state  | liquid   |  |
| Vapour pressure of the substance during use   | 1600 Pa  |  |
| Process temperature   | 20 °C  |  |
| Duration and Frequency of activity  | 480 min 5 days per week  |  |
| Indoor/Outdoor  | Indoor   |  |
| Risk Management Measures  |  |  |
| Ensure minimization of manual phases Avoid frequent and direct contact with substance. Supervision in place to check that the RMMs in place are being used correctly and OCs followed. Avoid splashing. |  |  |
| Wear suitable working clothes.  |  |  |
| Use suitable eye protection.  |  |  |
| Use suitable chemically resistant   |  |  |
| gloves.   |  |  |
| Exposure estimate and reference to  |  |  |
| Assessment method   | EASY TRA v4.2, ECETOC TRA v3.0, Worker   |  |
| E   | Worker - inhalation, long-term - local   |  |
| Exposure estimate   | 15,442 mg/m³   |  |
| Risk Characterization Ratio (RCR)   | 0,049813   |  |
| Assessment method   | Qualitative assessment   |  |
| Cuidones to Dougratus and Usage   | Worker - dermal  |  |
| Guidance to Downstream Users  |  |  |
| For scaling see: http://www.ecetoc.org/t  | га   |  |

| Contributing exposure scenario |  |
|--------------------------------|--|
| Use descriptors covered        | PROC3: Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition Use domain: industrial |
| Operational conditions         |  |

to Regulation (EC) No 1907/2006.

Date / Revised: 11.09.2023 Version: 5.0
Date previous version: 14.11.2022 Previous version: 4.0

Date / First version: 05.06.2014 Product: **ISOBUTANOL** 

(ID no. 30034839/SDS\_GEN\_RO/EN)

| Concentration of the substance                | 2-methylpropan-1-ol<br>Content: >= 0 % - <= 100 % |  |
|---|---|--|
| Physical state                                | liquid  |  |
| Vapour pressure of the substance during use   | 1600 Pa   |  |
| Process temperature                           | 20 °C   |  |
| Duration and Frequency of activity            | 480 min 5 days per week                           |  |
| Indoor/Outdoor                                | Indoor  |  |
| Risk Management Measures                      |   |  |
| Ensure minimization of manual                 |   |  |
| phases Avoid frequent and direct              |   |  |
| contact with substance. Supervision in        |   |  |
| place to check that the RMMs in place         |   |  |
| are being used correctly and OCs              |   |  |
| followed. Avoid splashing.                    |   |  |
| Wear suitable working clothes.                |   |  |
| Use suitable eye protection.                  |   |  |
| Use suitable chemically resistant             |   |  |
| gloves.                                       |   |  |
| Exposure estimate and reference to its source |   |  |
| Assessment method                             | EASY TRA v4.2, ECETOC TRA v3.0, Worker            |  |
|   | Worker - inhalation, long-term - local            |  |
| Exposure estimate                             | 30,884 mg/m³                                      |  |
| Risk Characterization Ratio (RCR)             | 0,099626  |  |
| Assessment method                             | Qualitative assessment                            |  |
|   | Worker - dermal                                   |  |
| Guidance to Downstream Users                  |   |  |
| For scaling see: http://www.ecetoc.org/t      | ra  |  |

| Contributing exposure scenario              |   |
|---|---|
| Use descriptors covered                     | PROC4: Chemical production where opportunity for exposure arises Use domain: industrial |
| Operational conditions                      |   |
| Concentration of the substance              | 2-methylpropan-1-ol<br>Content: >= 0 % - <= 100 %                                       |
| Physical state                              | liquid  |
| Vapour pressure of the substance during use | 1600 Pa   |
| Process temperature                         | 20 °C   |
| Duration and Frequency of activity          | 480 min 5 days per week   |

to Regulation (EC) No 1907/2006.

Date / Revised: 11.09.2023 Version: 5.0
Date previous version: 14.11.2022 Previous version: 4.0

Date / First version: 05.06.2014

Product: ISOBUTANOL

(ID no. 30034839/SDS\_GEN\_RO/EN)

Date of print 21.10.2025

| Indoor/Outdoor                                | Indoor                                 |  |
|---|--|--|
| Risk Management Measures                      |  |  |
| Ensure minimization of manual                 |  |  |
| phases Avoid frequent and direct              |  |  |
| contact with substance. Supervision in        |  |  |
| place to check that the RMMs in place         |  |  |
| are being used correctly and OCs              |  |  |
| followed. Avoid splashing.                    |  |  |
| Wear suitable working clothes.                |  |  |
| Use suitable eye protection.                  |  |  |
| Use suitable chemically resistant             |  |  |
| gloves.                                       |  |  |
| Exposure estimate and reference to its source |  |  |
| Assessment method                             | EASY TRA v4.2, ECETOC TRA v3.0, Worker |  |
|   | Worker - inhalation, long-term - local |  |
| Exposure estimate                             | 61,768 mg/m <sup>3</sup>               |  |
| Risk Characterization Ratio (RCR)             | 0,199252                               |  |
| Assessment method                             | Qualitative assessment                 |  |
| _   | Worker - dermal                        |  |
| Guidance to Downstream Users                  |  |  |
| For scaling see: http://www.ecetoc.org/tra    |  |  |

\* \* \* \* \* \* \* \* \* \* \* \* \* \* \* \*

## 6. Short title of exposure scenario

Use as an intermediate

ERC6a; PROC1, PROC2, PROC3, PROC4

### Control of exposure and risk management measures

| Contributing exposure scenario |  |
|--------------------------------|--|
| Use descriptors covered        | ERC6a: Use of intermediate As no environmental hazard was identified no environmental-related exposure assessment and risk characterization was performed. |
| Operational conditions         |  |

| Contributing exposure scenario |  |
|--------------------------------|--|
| Use descriptors covered        | PROC1: Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions.  Use domain: industrial |
| Operational conditions         |  |
| Concentration of the substance | 2-methylpropan-1-ol<br>Content: >= 0 % - <= 100 %  |

to Regulation (EC) No 1907/2006.

Date / Revised: 11.09.2023 Version: 5.0
Date previous version: 14.11.2022 Previous version: 4.0

Date / First version: 05.06.2014

Product: **ISOBUTANOL** 

(ID no. 30034839/SDS\_GEN\_RO/EN)

| Physical state                                | liquid                                 |  |
|---|--|--|
| Vapour pressure of the substance during use   | 1600 Pa                                |  |
| Process temperature                           | 20 °C                                  |  |
| Duration and Frequency of activity            | 480 min 5 days per week                |  |
| Indoor/Outdoor                                | Indoor                                 |  |
| Risk Management Measures                      |  |  |
| Ensure minimization of manual                 |  |  |
| phases Avoid frequent and direct              |  |  |
| contact with substance. Supervision in        |  |  |
| place to check that the RMMs in place         |  |  |
| are being used correctly and OCs              |  |  |
| followed. Avoid splashing.                    |  |  |
| Wear suitable working clothes.                |  |  |
| Use suitable eye protection.                  |  |  |
| Use suitable chemically resistant             |  |  |
| gloves.                                       |  |  |
| Exposure estimate and reference to its source |  |  |
| Assessment method                             | EASY TRA v4.2, ECETOC TRA v3.0, Worker |  |
|   | Worker - inhalation, long-term - local |  |
| Exposure estimate                             | 0,0309 mg/m <sup>3</sup>               |  |
| Risk Characterization Ratio (RCR)             | 0,0001                                 |  |
| Assessment method                             | Qualitative assessment                 |  |
|   | Worker - dermal                        |  |
| Guidance to Downstream Users                  |  |  |
| For scaling see: http://www.ecetoc.org/t      | ra                                     |  |

| Contributing exposure scenario     |  |
|------------------------------------|--|
| Use descriptors covered            | PROC2: Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions Use domain: industrial |
| Operational conditions             |  |
|                                    | 2-methylpropan-1-ol  |
| Concentration of the substance     | Content: >= 0 % - <= 100 %   |
| Physical state                     | liquid   |
| Vapour pressure of the substance   | 1600 Pa  |
| during use                         |  |
| Process temperature                | 20 °C  |
| Duration and Frequency of activity | 480 min 5 days per week  |
| Indoor/Outdoor                     | Indoor   |

to Regulation (EC) No 1907/2006.

Date / Revised: 11.09.2023 Version: 5.0
Date previous version: 14.11.2022 Previous version: 4.0

Date / First version: 05.06.2014 Product: **ISOBUTANOL** 

(ID no. 30034839/SDS\_GEN\_RO/EN)

| Risk Management Measures                 |  |
|--|--|
| Ensure minimization of manual            |  |
| phases Avoid frequent and direct         |  |
| contact with substance. Supervision in   |  |
| place to check that the RMMs in place    |  |
| are being used correctly and OCs         |  |
| followed. Avoid splashing.               |  |
| Wear suitable working clothes.           |  |
| Use suitable eye protection.             |  |
| Use suitable chemically resistant        |  |
| gloves.                                  |  |
| Exposure estimate and reference to it    | ts source                              |
| Assessment method                        | EASY TRA v4.2, ECETOC TRA v3.0, Worker |
|  | Worker - inhalation, long-term - local |
| Exposure estimate                        | 15,442 mg/m³                           |
| Risk Characterization Ratio (RCR)        | 0,049813                               |
| Assessment method                        | Qualitative assessment                 |
|  | Worker - dermal                        |
| Guidance to Downstream Users             |  |
| For scaling see: http://www.ecetoc.org/t | ra                                     |

| Contributing exposure scenario                              | Contributing exposure scenario   |  |
|---|--|--|
| Use descriptors covered                                     | PROC3: Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition Use domain: industrial |  |
| Operational conditions                                      |  |  |
| Concentration of the substance                              | 2-methylpropan-1-ol<br>Content: >= 0 % - <= 100 %  |  |
| Physical state  | liquid   |  |
| Vapour pressure of the substance during use                 | 1600 Pa  |  |
| Process temperature   | 20 °C  |  |
| Duration and Frequency of activity                          | 480 min 5 days per week  |  |
| Indoor/Outdoor  | Indoor   |  |
| Risk Management Measures                                    |  |  |
| Ensure minimization of manual                               |  |  |
| phases Avoid frequent and direct                            |  |  |
| contact with substance. Supervision in                      |  |  |
| place to check that the RMMs in place                       |  |  |
| are being used correctly and OCs followed. Avoid splashing. |  |  |
| Wear suitable working clothes.                              |  |  |

to Regulation (EC) No 1907/2006.

Date / Revised: 11.09.2023 Version: 5.0
Date previous version: 14.11.2022 Previous version: 4.0

Date / First version: 05.06.2014 Product: **ISOBUTANOL** 

(ID no. 30034839/SDS\_GEN\_RO/EN)

| Use suitable eye protection.           |  |
|--|--|
| Use suitable chemically resistant      |  |
| gloves.                                |  |
| Exposure estimate and reference to     | its source                             |
| Assessment method                      | EASY TRA v4.2, ECETOC TRA v3.0, Worker |
|  | Worker - inhalation, long-term - local |
| Exposure estimate                      | 30,884 mg/m³                           |
| Risk Characterization Ratio (RCR)      | 0,099626                               |
| Assessment method                      | Qualitative assessment                 |
|  | Worker - dermal                        |
| Guidance to Downstream Users           |  |
| For scaling see: http://www.ecetoc.org | /tra                                   |

| Contributing exposure scenario                |   |  |
|---|---|--|
| Use descriptors covered                       | PROC4: Chemical production where opportunity for exposure arises Use domain: industrial |  |
| Operational conditions                        | l   |  |
| Concentration of the substance                | 2-methylpropan-1-ol<br>Content: >= 0 % - <= 100 %                                       |  |
| Physical state                                | liquid  |  |
| Vapour pressure of the substance during use   | 1600 Pa   |  |
| Process temperature                           | 20 °C   |  |
| Duration and Frequency of activity            | 480 min 5 days per week   |  |
| Indoor/Outdoor                                | Indoor  |  |
| Risk Management Measures                      |   |  |
| Ensure minimization of manual                 |   |  |
| phases Avoid frequent and direct              |   |  |
| contact with substance. Supervision in        |   |  |
| place to check that the RMMs in place         |   |  |
| are being used correctly and OCs              |   |  |
| followed. Avoid splashing.                    |   |  |
| Wear suitable working clothes.                |   |  |
| Use suitable eye protection.                  |   |  |
| Use suitable chemically resistant             |   |  |
| gloves.                                       |   |  |
| Exposure estimate and reference to its source |   |  |
| Assessment method                             | EASY TRA v4.2, ECETOC TRA v3.0, Worker  |  |
|   | Worker - inhalation, long-term - local  |  |
| Exposure estimate                             | 61,768 mg/m <sup>3</sup>  |  |
| Risk Characterization Ratio (RCR)             | 0,199252  |  |
| Assessment method                             | Qualitative assessment  |  |
|   | Worker - dermal   |  |

to Regulation (EC) No 1907/2006.

Date / Revised: 11.09.2023 Version: 5.0
Date previous version: 14.11.2022 Previous version: 4.0

Date / First version: 05.06.2014

Product: ISOBUTANOL

(ID no. 30034839/SDS\_GEN\_RO/EN)

Date of print 21.10.2025

| Guidance to Downstream Users               |  |
|--|--|
| For scaling see: http://www.ecetoc.org/tra |  |

\* \* \* \* \* \* \* \* \* \* \* \* \* \* \* \* \*

## 7. Short title of exposure scenario

Use as co-formulant in Plant protection products, (consumer use) ERC8a, ERC8d; PC27

### Control of exposure and risk management measures

| Contributing exposure scenario                            |   |  |
|---|---|--|
|   | ECPA SPERC 8d.2.v2  |  |
| Use descriptors covered                                   | spray application   |  |
|   |   |  |
| Operational conditions                                    |   |  |
| Maximum annual application rate                           | 6,88 kg/ha  |  |
| Emission factor air                                       | 100 %   |  |
| Emission factor water                                     | 0,2 %   |  |
| Emission factor soil                                      | 0 %   |  |
| Number of applications                                    | 1   |  |
| Other Factors: Environment                                | Indoor use.   |  |
| application interval                                      | 1 days  |  |
|   | Indoor use.   |  |
| Risk Management Measures                                  |   |  |
| Type of STP   | no STP  |  |
| Exposure estimate and reference to its source             |   |  |
| Assessment method   | ECPA LET  |  |
| Risk Characterization Ratio (RCR)                         | 0,9   |  |
|   | Risk from environmental exposure is driven by freshwater. |  |
|   | 6,88  |  |
| Maximum amount of safe use                                | kg/ha   |  |
| Risk from environmental exposure is driven by freshwater. |   |  |

| Contributing exposure scenario  |   |
|---------------------------------|---|
| Use descriptors covered         | ECPA SPERC 8d.2.v2<br>spray application |
| Operational conditions          | ·                                       |
| Maximum annual application rate | 6,88 kg/ha                              |
| Emission factor air             | 100 %                                   |

to Regulation (EC) No 1907/2006.

Date / Revised: 11.09.2023 Version: 5.0
Date previous version: 14.11.2022 Previous version: 4.0

Date / First version: 05.06.2014

Product: ISOBUTANOL

(ID no. 30034839/SDS\_GEN\_RO/EN)

| Emission factor water                                     | 0,2 %   |        |
|---|---|--------|
| Emission factor soil                                      | 0 %   |        |
| Number of applications                                    | 1   |        |
| Other Factors: Environment                                | Outdoor use.  |        |
| application interval                                      | 1 days  |        |
|   | Outdoor use.  |        |
| Risk Management Measures                                  |   |        |
| Type of STP   |   | no STP |
| Exposure estimate and reference to                        | its source  |        |
| Assessment method   | ECPA LET  |        |
| Risk Characterization Ratio (RCR)                         | 0,9   |        |
|   | Risk from environmental exposure is driven by freshwater. |        |
|   | 6,88  |        |
| Maximum amount of safe use                                | kg/ha   |        |
|   |   |        |
| Risk from environmental exposure is driven by freshwater. |   |        |

| Contributing exposure scenario                |   |  |
|---|---|--|
| Use descriptors covered                       | PC27: Plant Protection products.                |  |
| Operational conditions                        |   |  |
|   | 2-methylpropan-1-ol                             |  |
| Concentration of the substance                | Content: >= 0 % - <= 50 %                       |  |
| Vapour pressure of the substance during use   | 1600 Pa   |  |
| Process temperature                           | 20 °C   |  |
| Duration and Fraguency of activity            | Exposure duration: 240 min                      |  |
| Duration and Frequency of activity            | Relevant for inhalative exposure estimates      |  |
| Duration and Frequency of activity            | 9 uses per year                                 |  |
| Room size                                     | 58 m3   |  |
| Ventilation rate per hour                     | 0,5   |  |
| body weight                                   | 65 kg   |  |
| Spray duration                                | 600 sec   |  |
| Risk Management Measures                      |   |  |
| Consumer Measures                             | Ensure spraying away from persons.              |  |
| Exposure estimate and reference to its source |   |  |
| Assessment method                             | EASY TRA v4.2, ConsExpo v4.1, Inhalation model: |  |
|   | Exposure to spray/dust                          |  |
|   | Consumer - inhalation, long-term - systemic     |  |
| Exposure estimate                             | 0,5809 mg/m³                                    |  |
| Risk Characterization Ratio (RCR)             | 0,010561  |  |

to Regulation (EC) No 1907/2006.

Date / Revised: 11.09.2023 Version: 5.0 Date previous version: 14.11.2022 Previous version: 4.0

Date / First version: 05.06.2014

Product: ISOBUTANOL

(ID no. 30034839/SDS\_GEN\_RO/EN)

Date of print 21.10.2025

|  | The exposure calculation is based on the mean concentration on the day of exposure. |
|--|---|
| Guidance to Downstream Users   |   |
| For scaling see: http://www.rivm.nl/en/healthanddisease/productsafety/ConsExpo.jsp |   |

\* \* \* \* \* \* \* \* \* \* \* \* \* \* \* \*

# 8. Short title of exposure scenario

Use as co-formulant in Plant protection products, (use in professional settings) ERC8a, ERC8d; PROC11

## Control of exposure and risk management measures

| Contributing exposure scenario         |   |  |
|--|---|--|
|  | ECPA SPERC 8d.2.v2  |  |
| Use descriptors covered                | spray application   |  |
| -                                      |   |  |
| Operational conditions                 |   |  |
| Maximum annual application rate        | 6,88 kg/ha  |  |
| Emission factor air                    | 100 %   |  |
| Emission factor water                  | 0,2 %   |  |
| Emission factor soil                   | 0 %   |  |
| Number of applications                 | 1   |  |
| Other Factors: Environment             | Indoor use.   |  |
| application interval                   | 1 days  |  |
|  | Indoor use.   |  |
| Risk Management Measures               |   |  |
| Type of STP                            | no STP  |  |
| Exposure estimate and reference to     | its source  |  |
| Assessment method                      | ECPA LET  |  |
| Risk Characterization Ratio (RCR)      | 0,9   |  |
|  | Risk from environmental exposure is driven by freshwater. |  |
|  | 6,88  |  |
| Maximum amount of safe use             | kg/ha   |  |
| Risk from environmental exposure is dr | iven by freshwater.                                       |  |

| Contributing exposure scenario  |                    |
|---------------------------------|--------------------|
|                                 | ECPA SPERC 8d.2.v2 |
| Use descriptors covered         | spray application  |
|                                 |                    |
| Operational conditions          |                    |
| Maximum annual application rate | 6,88 kg/ha         |

to Regulation (EC) No 1907/2006.

Date / Revised: 11.09.2023 Version: 5.0
Date previous version: 14.11.2022 Previous version: 4.0
Date / First version: 05.06.2014

Product: ISOBUTANOL

(ID no. 30034839/SDS\_GEN\_RO/EN)

| Emission factor air                    | 100 %   |        |
|--|---|--------|
| Emission factor water                  | 0,2 %   |        |
| Emission factor soil                   | 0 %   |        |
| Number of applications                 | 1   |        |
| Other Factors: Environment             | Outdoor use.  |        |
| application interval                   | 1 days  |        |
|  | Outdoor use.  |        |
| Risk Management Measures               |   |        |
| Type of STP                            |   | no STP |
| Exposure estimate and reference to     | its source  |        |
| Assessment method                      | ECPA LET  |        |
| Risk Characterization Ratio (RCR)      | 0,9   |        |
|  | Risk from environmental exposure is driven by freshwater. |        |
| Maximum amount of safe use             | 6,88<br>kg/ha   |        |
| Risk from environmental exposure is di | iven by freshwater.                                       |        |

| Contributing exposure scenario                     |                                 |
|--|---------------------------------|
| Handananintana assaul                              | PROC11: Non industrial spraying |
| Use descriptors covered                            | Use domain: professional        |
| Operational conditions                             |                                 |
|  | 2-methylpropan-1-ol             |
| Concentration of the substance                     | Content: >= 0 % - <= 100 %      |
| Physical state                                     | liquid                          |
| Vapour pressure of the substance during use        | 1600 Pa                         |
| Process temperature                                | 20 °C                           |
| Duration and Frequency of activity                 | 480 min 5 days per week         |
| Indoor/Outdoor                                     | outdoor, away from buildings    |
| Application rate                                   | > 3 l/min                       |
| Risk Management Measures                           |                                 |
| Ensure that the task is carried out only downward. |                                 |
| Ensure that general housekeeping is                |                                 |
| in place   |                                 |
| Ensure minimization of manual                      |                                 |
| phases Avoid frequent and direct                   |                                 |
| contact with substance. Supervision in             |                                 |
| place to check that the RMMs in place              |                                 |

to Regulation (EC) No 1907/2006.

Date / Revised: 11.09.2023 Version: 5.0
Date previous version: 14.11.2022 Previous version: 4.0

Date / First version: 05.06.2014

Product: ISOBUTANOL

(ID no. 30034839/SDS\_GEN\_RO/EN)

| are being used correctly and OCs                  |   |  |
|---|---|--|
| followed. Avoid splashing.                        |   |  |
| Wear suitable working clothes.                    |   |  |
| Use suitable eye protection.                      |   |  |
| Use suitable chemically resistant                 |   |  |
| gloves.   |   |  |
| Exposure estimate and reference to its source     |   |  |
| Assessment method                                 | EASY TRA v4.2, Advanced REACH Tool v1.5 |  |
|   | Worker - inhalation, long-term - local  |  |
| Exposure estimate                                 | 170 mg/m³                               |  |
| Risk Characterization Ratio (RCR)                 | 0,548387                                |  |
| Assessment method                                 | Qualitative assessment                  |  |
|   | Worker - dermal                         |  |
| Guidance to Downstream Users                      |   |  |
| For scaling see: http://www.advancedreachtool.com |   |  |

| Contributing exposure scenario                                 | Contributing exposure scenario  |  |
|--|---------------------------------|--|
|  | PROC11: Non industrial spraying |  |
| Use descriptors covered  | Use domain: professional        |  |
| Operational conditions   |                                 |  |
| _  | 2-methylpropan-1-ol             |  |
| Concentration of the substance                                 | Content: >= 0 % - <= 10 %       |  |
| Physical state   | liquid                          |  |
| Vapour pressure of the substance                               | 1600 Pa                         |  |
| during use   |                                 |  |
| Process temperature  | 20 °C                           |  |
| Duration and Frequency of activity                             | 480 min 5 days per week         |  |
| Indoor/Outdoor   | Indoor                          |  |
|  | Large workrooms only            |  |
| Application rate   | < 3 l/min                       |  |
| Risk Management Measures                                       |                                 |  |
| Ensure that the task is not carried out overhead.              |                                 |  |
| Use equipment with a fixed capturing hood exhaust ventilation. |                                 |  |
| Ensure that general housekeeping is                            |                                 |  |
| in place   |                                 |  |
| Ensure minimization of manual                                  |                                 |  |
| phases Avoid frequent and direct                               |                                 |  |
| contact with substance. Supervision in                         |                                 |  |
| place to check that the RMMs in place                          |                                 |  |
| are being used correctly and OCs                               |                                 |  |
| followed. Avoid splashing.                                     |                                 |  |
| Wear suitable working clothes.                                 |                                 |  |

to Regulation (EC) No 1907/2006.

Date / Revised: 11.09.2023 Version: 5.0
Date previous version: 14.11.2022 Previous version: 4.0

Date / First version: 05.06.2014

Product: ISOBUTANOL

(ID no. 30034839/SDS\_GEN\_RO/EN)

Date of print 21.10.2025

| Use suitable eye protection.                      |   |
|---|---|
| Use suitable chemically resistant                 |   |
| gloves.   |   |
| Exposure estimate and reference to its source     |   |
| Assessment method                                 | EASY TRA v4.2, Advanced REACH Tool v1.5 |
|   | Worker - inhalation, long-term - local  |
| Exposure estimate                                 | 220 mg/m³                               |
| Risk Characterization Ratio (RCR)                 | 0,709677                                |
| Assessment method                                 | Qualitative assessment                  |
|   | Worker - dermal                         |
| Guidance to Downstream Users                      |   |
| For scaling see: http://www.advancedreachtool.com |   |

\* \* \* \* \* \* \* \* \* \* \* \* \* \* \* \*

#### 9. Short title of exposure scenario

Use in Cleaning Agents, (consumer use) ERC8a, ERC8d; PC4, PC9a, PC9c, PC24, PC35, PC38

### Control of exposure and risk management measures

| Contributing exposure scenario |  |
|--------------------------------|--|
| Use descriptors covered        | ERC8a: Widespread use of non-reactive processing aid (no inclusion into or onto article, indoor) As no environmental hazard was identified no environmental-related exposure assessment and risk characterization was performed. |
| Operational conditions         |  |

| Contributing exposure scenario |   |
|--------------------------------|---|
| Use descriptors covered        | ERC8d: Widespread use of non-reactive processing aid (no inclusion into or onto article, outdoor) As no environmental hazard was identified no environmental-related exposure assessment and risk characterization was performed. |
| Operational conditions         |   |

| Contributing exposure scenario   |   |
|----------------------------------|---|
| Use descriptors covered          | PC4: Anti-Freeze and De-icing products. |
| Operational conditions           |   |
|                                  | 2-methylpropan-1-ol                     |
| Concentration of the substance   | Content: >= 0 % - <= 10 %               |
|                                  |   |
| Vapour pressure of the substance | 1600 Pa                                 |

to Regulation (EC) No 1907/2006.

Date / Revised: 11.09.2023 Version: 5.0
Date previous version: 14.11.2022 Previous version: 4.0

Date / First version: 05.06.2014

Product: **ISOBUTANOL** 

(ID no. 30034839/SDS\_GEN\_RO/EN)

| during use   |   |
|--|---|
| Process temperature  | 20 °C   |
| Duration and Frequency of activity   | Exposure duration: 10 min Relevant for inhalative exposure estimates                      |
| Duration and Frequency of activity   | 1 uses per day  |
| Room size  | 34 m3   |
| Ventilation rate per hour  | 1,5   |
| body weight  | 65 kg   |
|  | Amount per use 2.000 g Relevant for inhalative exposure estimates                         |
| Exposure estimate and reference to its source                                      |   |
| Assessment method  | EASY TRA v4.2, ConsExpo v4.1, Inhalation model: evaporation model - instantaneous release |
|  | Consumer - inhalation, long-term - systemic   |
| Exposure estimate  | 36,1512 mg/m <sup>3</sup>   |
| Risk Characterization Ratio (RCR)  | 0,657294  |
|  | The exposure calculation is based on the mean concentration on the day of exposure.       |
| Guidance to Downstream Users   |   |
| For scaling see: http://www.rivm.nl/en/healthanddisease/productsafety/ConsExpo.jsp |   |

| Contributing exposure scenario                |   |
|---|---|
| Use descriptors covered                       | PC4: Anti-Freeze and De-icing products.   |
| Operational conditions                        |   |
| Concentration of the substance                | 2-methylpropan-1-ol<br>Content: >= 0 % - <= 50 %  |
| Vapour pressure of the substance during use   | 1600 Pa   |
| Process temperature                           | 20 °C   |
| Duration and Frequency of activity            | Exposure duration: 15 min Relevant for inhalative exposure estimates                      |
| Duration and Frequency of activity            | 1 uses per day  |
| Room size                                     | 34 m3   |
| Ventilation rate per hour                     | 1,5   |
| body weight                                   | 65 kg   |
|   | Amount per use 4 g Relevant for inhalative exposure estimates                             |
| Exposure estimate and reference to its source |   |
| Assessment method                             | EASY TRA v4.2, ConsExpo v4.1, Inhalation model: evaporation model - instantaneous release |

to Regulation (EC) No 1907/2006.

Date / Revised: 11.09.2023 Version: 5.0
Date previous version: 14.11.2022 Previous version: 4.0

Date / First version: 05.06.2014 Product: **ISOBUTANOL** 

(ID no. 30034839/SDS\_GEN\_RO/EN)

|  | Consumer - inhalation, long-term - systemic   |
|--|---|
| Exposure estimate  | 0,5111 mg/m³                                  |
| Risk Characterization Ratio (RCR)  | 0,009292                                      |
|  | The exposure calculation is based on the mean |
|  | concentration on the day of exposure.         |
| Guidance to Downstream Users   |   |
| For scaling see: http://www.rivm.nl/en/healthanddisease/productsafety/ConsExpo.jsp |   |

| Contributing exposure scenario   |   |  |
|--|---|--|
| Use descriptors covered  | PC4: Anti-Freeze and De-icing products.   |  |
| Operational conditions   |   |  |
| Concentration of the substance   | 2-methylpropan-1-ol<br>Content: >= 0 % - <= 50 %  |  |
| Vapour pressure of the substance during use  | 1600 Pa   |  |
| Process temperature  | 20 °C   |  |
| Duration and Frequency of activity   | Exposure duration: 10 min Relevant for inhalative exposure estimates                      |  |
| Duration and Frequency of activity   | 1 uses per day  |  |
| Room size  | 34 m3   |  |
| Ventilation rate per hour  | 1,5   |  |
| body weight  | 65 kg   |  |
|  | Amount per use 15 g Relevant for inhalative exposure estimates                            |  |
| Exposure estimate and reference to   |   |  |
| Assessment method  | EASY TRA v4.2, ConsExpo v4.1, Inhalation model: evaporation model - instantaneous release |  |
|  | Consumer - inhalation, long-term - systemic   |  |
| Exposure estimate  | 1,3557 mg/m³  |  |
| Risk Characterization Ratio (RCR)  | 0,024649  |  |
|  | The exposure calculation is based on the mean concentration on the day of exposure.       |  |
| Guidance to Downstream Users   |   |  |
| For scaling see: http://www.rivm.nl/en/healthanddisease/productsafety/ConsExpo.jsp |   |  |

| Contributing exposure scenario |  |  |
|--------------------------------|--|--|
| Use descriptors covered        | PC9a_1, PC15_1: Subcategory: Waterborne latex wall paint |  |
| Operational conditions         |  |  |
| Concentration of the substance | 2-methylpropan-1-ol<br>Content: >= 0 % - <= 1,5 %        |  |

to Regulation (EC) No 1907/2006.

Date / Revised: 11.09.2023 Version: 5.0
Date previous version: 14.11.2022 Previous version: 4.0

Date / First version: 05.06.2014 Product: **ISOBUTANOL** 

(ID no. 30034839/SDS\_GEN\_RO/EN)

| Vapour pressure of the substance during use | 1600 Pa  |
|---|--|
| Process temperature                         | 20 °C  |
| Duration and Frequency of activity          | Exposure duration: 132 min Relevant for inhalative exposure estimates    |
| Duration and Frequency of activity          | Application duration: 120 min Relevant for inhalative exposure estimates |
| Duration and Frequency of activity          | 1 uses per year  |
| Room size                                   | 20 m3  |
| Ventilation rate per hour                   | 0,6  |
| Temperature (Application)                   | 20 °C  |
| body weight                                 | 65 kg  |
| Release area                                | 100000 cm <sup>2</sup>   |
|   | Release area increases over time   |
| Release duration                            | 120 min  |
|   | Relevant for inhalative exposure estimates                               |
| Exposure estimate and reference to          | its source   |
| Assessment method                           | EASY TRA v4.2, ConsExpo v4.1, Inhalation model:                          |
| Assessment method                           | exposure to vapour - evaporation   |
|   | Consumer - inhalation, long-term - systemic                              |
| Exposure estimate                           | 27,5237 mg/m³  |
| Risk Characterization Ratio (RCR)           | 0,500431   |
|   | The exposure calculation is based on the mean                            |
|   | concentration on the day of exposure.                                    |
| Guidance to Downstream Users                |  |
| For scaling see: http://www.rivm.nl/en/     | nealthanddisease/productsafety/ConsExpo.jsp                              |

| Contributing exposure scenario              |  |
|---|--|
| Use descriptors covered                     | PC9a_2, PC15_2: Subcategory: Solvent rich, high solid, water borne paint |
| Operational conditions                      |  |
| Concentration of the substance              | 2-methylpropan-1-ol<br>Content: >= 0 % - <= 2 %                          |
| Vapour pressure of the substance during use | 1600 Pa  |
| Process temperature                         | 20 °C  |
| Duration and Frequency of activity          | Exposure duration: 132 min Relevant for inhalative exposure estimates    |
| Duration and Frequency of activity          | Application duration: 120 min Relevant for inhalative exposure estimates |
| Duration and Frequency of activity          | 1 uses per year  |

to Regulation (EC) No 1907/2006.

Date / Revised: 11.09.2023 Version: 5.0
Date previous version: 14.11.2022 Previous version: 4.0

Date / First version: 05.06.2014 Product: **ISOBUTANOL** 

(ID no. 30034839/SDS\_GEN\_RO/EN)

| Room size  | 20 m3   |  |
|--|---|--|
| Ventilation rate per hour  | 0,6   |  |
| Temperature (Application)  | 20 °C   |  |
| body weight  | 65 kg   |  |
| Release area   | 100000 cm <sup>2</sup>                          |  |
|  | Release area increases over time                |  |
| Release duration   | 120 min   |  |
|  | Relevant for inhalative exposure estimates      |  |
| Exposure estimate and reference to its source                                      |   |  |
| Assessment method  | EASY TRA v4.2, ConsExpo v4.1, Inhalation model: |  |
| Assessment method  | exposure to vapour - evaporation                |  |
|  | Consumer - inhalation, long-term - systemic     |  |
| Exposure estimate  | 43,6319 mg/m <sup>3</sup>                       |  |
| Risk Characterization Ratio (RCR)  | 0,793308  |  |
|  | The exposure calculation is based on the mean   |  |
|  | concentration on the day of exposure.           |  |
| Guidance to Downstream Users   |   |  |
| For scaling see: http://www.rivm.nl/en/healthanddisease/productsafety/ConsExpo.jsp |   |  |

| Contributing exposure scenario              |   |  |
|---|---|--|
| Use descriptors covered                     | PC9a_3, PC15_3: Subcategory: Aerosol spray can        |  |
| Operational conditions                      |   |  |
|   | 2-methylpropan-1-ol                                   |  |
| Concentration of the substance              | Content: >= 0 % - <= 25 %                             |  |
| Vapour pressure of the substance during use | 1600 Pa   |  |
| Process temperature                         | 20 °C   |  |
| Duration and Fraguency of activity          | Exposure duration: 20 min                             |  |
| Duration and Frequency of activity          | Relevant for inhalative exposure estimates            |  |
| Duration and Frequency of activity          | 2 uses per year                                       |  |
| Room size                                   | 34 m3   |  |
| Ventilation rate per hour                   | 1,5   |  |
| body weight                                 | 65 kg   |  |
|   | Amount per use 400 g Relevant for inhalative exposure |  |
|   | estimates   |  |
| Exposure estimate and reference to          |   |  |
| Assessment method                           | EASY TRA v4.2, ConsExpo v4.1, Inhalation model:       |  |
| 7.5555                                      | evaporation model - instantaneous release             |  |
|   | Consumer - inhalation, long-term - systemic           |  |
| Exposure estimate                           | 32,1529 mg/m³   |  |
| Risk Characterization Ratio (RCR)           | 0,584598  |  |
|   | The exposure calculation is based on the mean         |  |

to Regulation (EC) No 1907/2006.

Date / Revised: 11.09.2023 Version: 5.0
Date previous version: 14.11.2022 Previous version: 4.0

Date / First version: 05.06.2014 Product: **ISOBUTANOL** 

(ID no. 30034839/SDS\_GEN\_RO/EN)

| concentration on the day of exposure.  |
|--|
| Guidance to Downstream Users   |
| For scaling see: http://www.rivm.nl/en/healthanddisease/productsafety/ConsExpo.jsp |

| Contributing exposure scenario              |   |
|---|---|
| Use descriptors covered                     | PC9a_4, PC15_4: Subcategory: Removers (paint-, glue-, wall paper-, sealant-remover) |
| Operational conditions                      |   |
| Concentration of the substance              | 2-methylpropan-1-ol<br>Content: >= 0 % - <= 3 %                                     |
| Vapour pressure of the substance during use | 1600 Pa   |
| Process temperature                         | 20 °C   |
| Duration and Frequency of activity          | Exposure duration: 240 min Relevant for inhalative exposure estimates               |
| Duration and Frequency of activity          | Application duration: 240 min Relevant for inhalative exposure estimates            |
| Duration and Frequency of activity          | < 1 uses per year   |
| Room size                                   | 30 m3   |
| Ventilation rate per hour                   | 1,5   |
| Temperature (Application)                   | 20 °C   |
| body weight                                 | 65 kg   |
| Release area                                | 50000 cm <sup>2</sup>   |
|   | Release area increases over time  |
| Release duration                            | 240 min   |
|   | Relevant for inhalative exposure estimates  |
| Exposure estimate and reference to          |   |
| Assessment method                           | EASY TRA v4.2, ConsExpo v4.1, Inhalation model: exposure to vapour - evaporation    |
|   | Consumer - inhalation, long-term - systemic   |
| Exposure estimate                           | 46,3115 mg/m³   |
| Risk Characterization Ratio (RCR)           | 0,842028  |
|   | The exposure calculation is based on the mean concentration on the day of exposure. |
| Guidance to Downstream Users                |   |
| For scaling see: http://www.rivm.nl/en/h    | nealthanddisease/productsafety/ConsExpo.jsp   |

| Contributing exposure scenario |                           |
|--------------------------------|---------------------------|
| Use descriptors covered        | PC9c: Finger paints       |
| Operational conditions         |                           |
| Concentration of the substance | 2-methylpropan-1-ol       |
|                                | Content: >= 0 % - <= 50 % |

to Regulation (EC) No 1907/2006.

Date / Revised: 11.09.2023 Version: 5.0
Date previous version: 14.11.2022 Previous version: 4.0

Date / First version: 05.06.2014 Product: **ISOBUTANOL** 

(ID no. 30034839/SDS\_GEN\_RO/EN)

| Vapour pressure of the substance   | 1600 Pa                           |
|------------------------------------|-----------------------------------|
| during use                         |                                   |
| Process temperature                | 20 °C                             |
| Duration and Frequency of activity | 365 uses per year                 |
| Exposed skin area                  | Both hands (820 cm <sup>2</sup> ) |
| Uptake fraction dermal             | 100 %                             |
| Uptake fraction oral               | 100 %                             |

| Contributing exposure scenario              |   |  |
|---|---|--|
| Use descriptors covered                     | PC24: Lubricants, Greases and Release Products Exposure of the consumer can be ruled out. Use in closed system is assumed |  |
| Operational conditions                      |   |  |
| Vapour pressure of the substance during use | 1600 Pa   |  |
| Process temperature                         | 20 °C   |  |

| Contributing exposure scenario                |  |
|---|--|
| Use descriptors covered                       | PC8_1, PC35_1: Subcategory: Laundry and dish washing products  |
| Operational conditions                        |  |
| Concentration of the substance                | 2-methylpropan-1-ol<br>Content: >= 0 % - <= 5 %                |
| Vapour pressure of the substance during use   | 1600 Pa  |
| Process temperature                           | 20 °C  |
| Duration and Frequency of activity            | Exposure duration: 1 h 365 uses per year                       |
| Room size                                     | 20 m3  |
| Ventilation rate per hour                     | 0,6  |
| Exposed skin area                             | Both hands (820 cm <sup>2</sup> )                              |
| Uptake fraction dermal                        | 100 %  |
|   | Amount per use 15 g Relevant for inhalative exposure estimates |
| Exposure estimate and reference to its source |  |
| Assessment method                             | EASY TRA v4.2, ECETOC TRA, Consumer                            |
|   | Consumer - inhalation, long-term - systemic                    |

to Regulation (EC) No 1907/2006.

Date / Revised: 11.09.2023 Version: 5.0
Date previous version: 14.11.2022 Previous version: 4.0

Date / First version: 05.06.2014

Product: ISOBUTANOL

(ID no. 30034839/SDS\_GEN\_RO/EN)

| Exposure estimate                          | 23,4375 mg/m³ |
|--|---------------|
| Risk Characterization Ratio (RCR)          | 0,426136      |
| Guidance to Downstream Users               |               |
| For scaling see: http://www.ecetoc.org/tra |               |

| Contributing exposure scenario                |  |  |
|---|--|--|
| Use descriptors covered                       | PC8_2, PC35_2: Subcategory: Cleaners, liquids (all purpose cleaners, sanitary products, floor cleaners, glass cleaners, carpet cleaners, metal cleaners) |  |
| Operational conditions                        |  |  |
| Concentration of the substance                | 2-methylpropan-1-ol<br>Content: >= 0 % - <= 50 %   |  |
| Vapour pressure of the substance during use   | 1600 Pa  |  |
| Process temperature                           | 20 °C  |  |
| Duration and Frequency of activity            | Exposure duration: 0,75 min Relevant for inhalative exposure estimates   |  |
| Duration and Frequency of activity            | Application duration: 0,3 min Relevant for inhalative exposure estimates   |  |
| Duration and Frequency of activity            | 104 uses per year  |  |
| Room size                                     | 1 m3   |  |
| Ventilation rate per hour                     | 0,5  |  |
| Temperature (Application)                     | 20 °C  |  |
| body weight                                   | 65 kg  |  |
| Release area                                  | 20 cm <sup>2</sup>   |  |
|   | Release area is constant   |  |
| Release duration                              | 0,3 min  |  |
|   | Relevant for inhalative exposure estimates   |  |
| Exposure estimate and reference to its source |  |  |
| Assessment method                             | EASY TRA v4.2, ConsExpo v4.1, Inhalation model: exposure to vapour - evaporation   |  |
|   | Consumer - inhalation, long-term - systemic  |  |
| Exposure estimate                             | 4,5898 mg/m³   |  |
| Risk Characterization Ratio (RCR)             | 0,083451   |  |
|   | The exposure calculation is based on the mean concentration on the day of exposure.  |  |
| Guidance to Downstream Users                  |  |  |
| For scaling see: http://www.rivm.nl/en/       | healthanddisease/productsafety/ConsExpo.jsp  |  |

| Contributing exposure scenario |   |
|--------------------------------|---|
| Use descriptors covered        | PC8_2, PC35_2: Subcategory: Cleaners, liquids (all purpose cleaners, sanitary products, floor cleaners, glass |
| Use descriptors covered        | cleaners, carpet cleaners, metal cleaners)  |

to Regulation (EC) No 1907/2006.

Date / Revised: 11.09.2023 Version: 5.0
Date previous version: 14.11.2022 Previous version: 4.0

Date / First version: 05.06.2014

Product: **ISOBUTANOL** 

(ID no. 30034839/SDS\_GEN\_RO/EN)

| Operational conditions   |   |
|--|---|
|  | 2-methylpropan-1-ol                             |
| Concentration of the substance   | Content: >= 0 % - <= 4 %                        |
| Noncour processes of the cultures  | 4000 De   |
| Vapour pressure of the substance during use  | 1600 Pa   |
| Process temperature  | 20 °C   |
| Duration and Frequency of activity   | Exposure duration: 240 min                      |
|  | Relevant for inhalative exposure estimates      |
| Duration and Frequency of activity   | Application duration: 30 min                    |
| Baration and Froquency of activity   | Relevant for inhalative exposure estimates      |
| Duration and Frequency of activity   | 104 uses per year                               |
| Room size  | 58 m3   |
| Ventilation rate per hour  | 0,5   |
| Temperature (Application)  | 20 °C   |
| body weight  | 65 kg   |
| Release area   | 220000 cm <sup>2</sup>                          |
|  | Release area increases over time                |
| Release duration   | 30 min  |
|  | Relevant for inhalative exposure estimates      |
| Exposure estimate and reference to   | its source                                      |
| Assessment method  | EASY TRA v4.2, ConsExpo v4.1, Inhalation model: |
| Assessment method  | exposure to vapour - evaporation                |
|  | Consumer - inhalation, long-term - systemic     |
| Exposure estimate  | 42,7271 mg/m³                                   |
| Risk Characterization Ratio (RCR)  | 0,776856  |
| ,  | The exposure calculation is based on the mean   |
|  | concentration on the day of exposure.           |
| Guidance to Downstream Users   |   |
| For scaling see: http://www.rivm.nl/en/healthanddisease/productsafety/ConsExpo.jsp |   |
|  |   |

| Contributing exposure scenario              |  |
|---|--|
| Use descriptors covered                     | PC8_3, PC35_3: Subcategory: Cleaners, trigger sprays (all purpose cleaners, sanitary products, glass cleaners) |
| Operational conditions                      | ·  |
| Concentration of the substance              | 2-methylpropan-1-ol<br>Content: >= 0 % - <= 20 %   |
| Vapour pressure of the substance during use | 1600 Pa  |
| Process temperature                         | 20 °C  |
| Duration and Frequency of activity          | Exposure duration: 25 min  |

to Regulation (EC) No 1907/2006.

Date / Revised: 11.09.2023 Version: 5.0
Date previous version: 14.11.2022 Previous version: 4.0

Date / First version: 05.06.2014

Product: **ISOBUTANOL** 

(ID no. 30034839/SDS\_GEN\_RO/EN)

|  | Relevant for inhalative exposure estimates      |
|--|---|
| Duration and Frequency of activity   | Application duration: 20 min                    |
|  | Relevant for inhalative exposure estimates      |
| Duration and Frequency of activity   | 52 uses per year                                |
| Room size  | 10 m3   |
| Ventilation rate per hour  | 2   |
| Temperature (Application)  | 20 °C   |
| body weight  | 65 kg   |
| Release area   | 64000 cm <sup>2</sup>                           |
|  | Release area is constant                        |
| Release duration   | 20 min  |
|  | Relevant for inhalative exposure estimates      |
| Exposure estimate and reference to   | its source                                      |
| Assessment method  | EASY TRA v4.2, ConsExpo v4.1, Inhalation model: |
| Assessment method  | exposure to vapour - evaporation                |
|  | Consumer - inhalation, long-term - systemic     |
| Exposure estimate  | 7,0627 mg/m <sup>3</sup>                        |
| Risk Characterization Ratio (RCR)  | 0,128413  |
|  | The exposure calculation is based on the mean   |
|  | concentration on the day of exposure.           |
| Guidance to Downstream Users   |   |
| For scaling see: http://www.rivm.nl/en/healthanddisease/productsafety/ConsExpo.jsp |   |

| Contributing exposure scenario              |  |
|---|--|
| Use descriptors covered                     | PC38: Welding and soldering products, flux products.                 |
| Operational conditions                      |  |
| Concentration of the substance              | 2-methylpropan-1-ol<br>Content: >= 0 % - <= 10 %                     |
| Vapour pressure of the substance during use | 1600 Pa  |
| Process temperature                         | 20 °C  |
| Duration and Frequency of activity          | Exposure duration: 60 min Relevant for inhalative exposure estimates |
| Duration and Frequency of activity          | 1 uses per day   |
| Room size                                   | 20 m3  |
| Ventilation rate per hour                   | 0,6  |
| body weight                                 | 65 kg  |
|   | Amount per use 12 g Relevant for inhalative exposure estimates       |
| Exposure estimate and reference to          | its source   |
| Assessment method                           | EASY TRA v4.2, ConsExpo v4.1, Inhalation model:                      |

to Regulation (EC) No 1907/2006.

Date / Revised: 11.09.2023 Version: 5.0
Date previous version: 14.11.2022 Previous version: 4.0

Date / First version: 05.06.2014

Product: ISOBUTANOL

(ID no. 30034839/SDS\_GEN\_RO/EN)

Date of print 21.10.2025

|  | evaporation model - instantaneous release     |
|--|---|
|  | Consumer - inhalation, long-term - systemic   |
| Exposure estimate  | 1,8801 mg/m³                                  |
| Risk Characterization Ratio (RCR)  | 0,034184                                      |
|  | The exposure calculation is based on the mean |
|  | concentration on the day of exposure.         |
| Guidance to Downstream Users   |   |
| For scaling see: http://www.rivm.nl/en/healthanddisease/productsafety/ConsExpo.jsp |   |

\* \* \* \* \* \* \* \* \* \* \* \* \* \* \* \*

#### 10. Short title of exposure scenario

Use in Cleaning Agents, (use in industrial settings) ERC4; PROC7, PROC10, PROC13

# Control of exposure and risk management measures

| Contributing exposure scenario |   |
|--------------------------------|---|
| Use descriptors covered        | ERC4: Use of non-reactive processing aid at industrial site (no inclusion into or onto article) As no environmental hazard was identified no environmental-related exposure assessment and risk characterization was performed. |
| Operational conditions         | ·   |

| Contributing exposure scenario              |   |
|---|---|
| Use descriptors covered                     | PROC7: Industrial spraying Use domain: industrial |
| Operational conditions                      |   |
| Concentration of the substance              | 2-methylpropan-1-ol<br>Content: >= 0 % - <= 100 % |
| Physical state                              | liquid  |
| Vapour pressure of the substance during use | 1600 Pa   |
| Process temperature                         | 20 °C   |
| Duration and Frequency of activity          | 480 min 5 days per week                           |
| Indoor/Outdoor                              | Indoor  |
| Risk Management Measures                    |   |
| Ensure minimization of manual               |   |
| phases Ensure that the task is being        |   |
| carried out outside the breathing zone      |   |
| of a worker (distance head-product          |   |

to Regulation (EC) No 1907/2006.

Date / Revised: 11.09.2023 Version: 5.0
Date previous version: 14.11.2022 Previous version: 4.0

Date / First version: 05.06.2014

Product: **ISOBUTANOL** 

(ID no. 30034839/SDS\_GEN\_RO/EN)

| greater than 1m). Supervision in place to check that the RMMs in place are being used correctly and OCs followed. Regular inspection and maintenance of equipment and machines. |   |  |  |
|---|---|--|--|
| Ensure that a spraying booth is used.   |   |  |  |
| Use suitable eye protection.  |   |  |  |
| Avoid frequent and direct contact with  |   |  |  |
| substance.  |   |  |  |
| Use suitable chemically resistant   |   |  |  |
| gloves.   |   |  |  |
| Exposure estimate and reference to it   | Exposure estimate and reference to its source |  |  |
| Assessment method   | EASY TRA v4.2, Stoffenmanager 8               |  |  |
|   | Worker - inhalation, long-term - local        |  |  |
| Exposure estimate   | 0,0001 mg/m <sup>3</sup>                      |  |  |
| Risk Characterization Ratio (RCR)   | 0,000001                                      |  |  |
| Assessment method   | Qualitative assessment                        |  |  |
|   | Worker - dermal                               |  |  |
| Guidance to Downstream Users  |   |  |  |
| For scaling see: https://www.stoffenmanager.nl/default.aspx   |   |  |  |

| Contributing exposure scenario  |   |
|---|---|
| Use descriptors covered   | PROC10: Roller application or brushing Use domain: industrial |
| Operational conditions  |   |
| Concentration of the substance  | 2-methylpropan-1-ol<br>Content: >= 0 % - <= 100 %             |
| Physical state  | liquid  |
| Vapour pressure of the substance during use   | 1600 Pa   |
| Process temperature   | 20 °C   |
| Duration and Frequency of activity  | 480 min 5 days per week                                       |
| Indoor/Outdoor  | Indoor  |
| Risk Management Measures  |   |
| Ensure minimization of manual phases Avoid frequent and direct contact with substance. Supervision in |   |
| place to check that the RMMs in place are being used correctly and OCs                                |   |
| followed. Avoid splashing.  |   |
| Wear suitable working clothes.  |   |
| Use suitable eye protection. Use suitable chemically resistant  |   |

to Regulation (EC) No 1907/2006.

Date / Revised: 11.09.2023 Version: 5.0
Date previous version: 14.11.2022 Previous version: 4.0

Date / First version: 05.06.2014 Product: **ISOBUTANOL** 

(ID no. 30034839/SDS\_GEN\_RO/EN)

| gloves.                                       |  |
|---|--|
| Exposure estimate and reference to its source |  |
| Assessment method                             | EASY TRA v4.2, ECETOC TRA v3.0, Worker |
|   | Worker - inhalation, long-term - local |
| Exposure estimate                             | 154,42 mg/m³                           |
| Risk Characterization Ratio (RCR)             | 0,498129                               |
| Assessment method                             | Qualitative assessment                 |
|   | Worker - dermal                        |
| Guidance to Downstream Users                  |  |
| For scaling see: http://www.ecetoc.org/tra    |  |

| Contributing exposure scenario              |  |
|---|--|
| Use descriptors covered                     | PROC13: Treatment of articles by dipping and pouring. Use domain: industrial |
| Operational conditions                      |  |
|   | 2-methylpropan-1-ol  |
| Concentration of the substance              | Content: >= 0 % - <= 100 %   |
| Physical state                              | liquid   |
| Vapour pressure of the substance during use | 1600 Pa  |
| Process temperature                         | 20 °C  |
| Duration and Frequency of activity          | 480 min 5 days per week  |
| Indoor/Outdoor                              | Indoor   |
| Risk Management Measures                    |  |
| Ensure minimization of manual               |  |
| phases Avoid frequent and direct            |  |
| contact with substance. Supervision in      |  |
| place to check that the RMMs in place       |  |
| are being used correctly and OCs            |  |
| followed. Avoid splashing.                  |  |
| Wear suitable working clothes.              |  |
| Use suitable eye protection.                |  |
| Use suitable chemically resistant           |  |
| gloves.                                     |  |
| Exposure estimate and reference to i        |  |
| Assessment method                           | EASY TRA v4.2, ECETOC TRA v3.0, Worker                                       |
|   | Worker - inhalation, long-term - local                                       |
| Exposure estimate                           | 154,42 mg/m³   |
| Risk Characterization Ratio (RCR)           | 0,498129   |
| Assessment method                           | Qualitative assessment   |
|   | Worker - dermal  |
| Guidance to Downstream Users                |  |
| For scaling see: http://www.ecetoc.org/t    | ra   |

to Regulation (EC) No 1907/2006.

Date / Revised: 11.09.2023 Version: 5.0
Date previous version: 14.11.2022 Previous version: 4.0

Date / First version: 05.06.2014

Product: ISOBUTANOL

(ID no. 30034839/SDS\_GEN\_RO/EN)

Date of print 21.10.2025

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#### 11. Short title of exposure scenario

Use in Cleaning Agents, (use in professional settings) ERC8a, ERC8d; PROC10, PROC11, PROC13, PROC19

#### Control of exposure and risk management measures

| Contributing exposure scenario |  |
|--------------------------------|--|
| Use descriptors covered        | ERC8a: Widespread use of non-reactive processing aid (no inclusion into or onto article, indoor) As no environmental hazard was identified no environmental-related exposure assessment and risk characterization was performed. |
| Operational conditions         |  |

| Contributing exposure scenario |   |
|--------------------------------|---|
| Use descriptors covered        | ERC8d: Widespread use of non-reactive processing aid (no inclusion into or onto article, outdoor) As no environmental hazard was identified no environmental-related exposure assessment and risk characterization was performed. |
| Operational conditions         |   |

| Contributing exposure scenario  |   |  |
|---|---|--|
| Use descriptors covered   | PROC10: Roller application or brushing Use domain: professional |  |
| Operational conditions  |   |  |
| Concentration of the substance  | 2-methylpropan-1-ol<br>Content: >= 0 % - <= 100 %               |  |
| Physical state  | liquid  |  |
| Vapour pressure of the substance during use   | 1600 Pa   |  |
| Process temperature   | 20 °C   |  |
| Duration and Frequency of activity  | 480 min 5 days per week   |  |
| Indoor/Outdoor  | Indoor  |  |
| Risk Management Measures  |   |  |
| Provide a good standard of general ventilation (not less than 3 - 5 air changes per hour) | Effectiveness: 30 %   |  |
| Ensure minimization of manual   |   |  |

to Regulation (EC) No 1907/2006.

Date / Revised: 11.09.2023 Version: 5.0
Date previous version: 14.11.2022 Previous version: 4.0

Date / First version: 05.06.2014

Product: ISOBUTANOL

(ID no. 30034839/SDS\_GEN\_RO/EN)

| phases Avoid frequent and direct contact with substance. Supervision in place to check that the RMMs in place are being used correctly and OCs followed. Avoid splashing.  Wear suitable working clothes.  Use suitable eye protection.  Use suitable chemically resistant |   |  |  |
|--|---|--|--|
| gloves.  | its source                                    |  |  |
| -  | Exposure estimate and reference to its source |  |  |
| Assessment method  | EASY TRA v4.2, ECETOC TRA v3.0, Worker        |  |  |
|  | Worker - inhalation, long-term - local        |  |  |
| Exposure estimate  | 216,188 mg/m³                                 |  |  |
| Risk Characterization Ratio (RCR)  | 0,697381                                      |  |  |
| Assessment method  | Qualitative assessment                        |  |  |
|  | Worker - dermal                               |  |  |
| Guidance to Downstream Users   |   |  |  |
| For scaling see: http://www.ecetoc.org/  |   |  |  |

| Contributing exposure scenario              |                                 |
|---|---------------------------------|
|   | PROC11: Non industrial spraying |
| Use descriptors covered                     | Use domain: professional        |
| Operational conditions                      |                                 |
|   | 2-methylpropan-1-ol             |
| Concentration of the substance              | Content: >= 0 % - <= 100 %      |
| Physical state                              | liquid                          |
| Vapour pressure of the substance during use | 1600 Pa                         |
| Process temperature                         | 20 °C                           |
| Duration and Frequency of activity          | 480 min 5 days per week         |
| Indoor/Outdoor                              | Indoor                          |
| Risk Management Measures                    |                                 |
| Ensure minimization of manual               |                                 |
| phases Supervision in place to check        |                                 |
| that the RMMs in place are being            |                                 |
| used correctly and OCs followed.            |                                 |
| Clean equipment and the work area           |                                 |
| every day. Regular inspection and           |                                 |
| maintenance of equipment and machines.      |                                 |
| Ensure that a spraying booth is used.       |                                 |
| Use suitable eye protection.                |                                 |
| Avoid frequent and direct contact with      |                                 |
| substance.                                  |                                 |
|   |                                 |

to Regulation (EC) No 1907/2006.

Date / Revised: 11.09.2023 Version: 5.0
Date previous version: 14.11.2022 Previous version: 4.0

Date / First version: 05.06.2014 Product: **ISOBUTANOL** 

(ID no. 30034839/SDS\_GEN\_RO/EN)

| Use suitable chemically resistant                           |  |  |
|---|--|--|
| gloves.   |  |  |
| Exposure estimate and reference to its source               |  |  |
| Assessment method   | EASY TRA v4.2, Stoffenmanager 8        |  |
|   | Worker - inhalation, long-term - local |  |
| Exposure estimate   | 0,0001 mg/m³                           |  |
| Risk Characterization Ratio (RCR)                           | 0,000001                               |  |
| Assessment method   | Qualitative assessment                 |  |
|   | Worker - dermal                        |  |
| Guidance to Downstream Users                                |  |  |
| For scaling see: https://www.stoffenmanager.nl/default.aspx |  |  |

| Contributing exposure scenario                              |                                 |
|---|---------------------------------|
|   | PROC11: Non industrial spraying |
| Use descriptors covered                                     | Use domain: professional        |
| Operational conditions                                      | I                               |
|   | 2-methylpropan-1-ol             |
| Concentration of the substance                              | Content: >= 0 % - <= 10 %       |
| Physical state  | liquid                          |
| Vapour pressure of the substance during use                 | 1600 Pa                         |
| Process temperature   | 20 °C                           |
| Duration and Frequency of activity                          | 480 min 5 days per week         |
| Indoor/Outdoor  | Indoor                          |
|   | Large workrooms only            |
| Application rate  | < 3 l/min                       |
| Risk Management Measures                                    |                                 |
| Ensure that the task is not carried out                     |                                 |
| overhead.   |                                 |
| Use equipment with a fixed capturing                        |                                 |
| hood exhaust ventilation.                                   |                                 |
| Ensure that general housekeeping is                         |                                 |
| in place  |                                 |
| Ensure minimization of manual                               |                                 |
| phases Avoid frequent and direct                            |                                 |
| contact with substance. Supervision in                      |                                 |
| place to check that the RMMs in place                       |                                 |
| are being used correctly and OCs                            |                                 |
| followed. Avoid splashing.                                  |                                 |
| Wear suitable working clothes. Use suitable eye protection. |                                 |
| Use suitable chemically resistant                           |                                 |
| gloves.   |                                 |
| Exposure estimate and reference to i                        | its source                      |

to Regulation (EC) No 1907/2006.

Date / Revised: 11.09.2023 Version: 5.0
Date previous version: 14.11.2022 Previous version: 4.0

Date / First version: 05.06.2014 Product: **ISOBUTANOL** 

(ID no. 30034839/SDS\_GEN\_RO/EN)

| Assessment method                                 | EASY TRA v4.2, Advanced REACH Tool v1.5 |  |
|---|---|--|
|   | Worker - inhalation, long-term - local  |  |
| Exposure estimate                                 | 220 mg/m³                               |  |
| Risk Characterization Ratio (RCR)                 | 0,709677                                |  |
| Assessment method                                 | Qualitative assessment                  |  |
|   | Worker - dermal                         |  |
| Guidance to Downstream Users                      |   |  |
| For scaling see: http://www.advancedreachtool.com |   |  |

| Contributing exposure scenario  |  |
|---|--|
| Use descriptors covered   | PROC13: Treatment of articles by dipping and pouring. Use domain: professional |
| Operational conditions  |  |
| Concentration of the substance  | 2-methylpropan-1-ol<br>Content: >= 0 % - <= 100 %                              |
| Physical state  | liquid   |
| Vapour pressure of the substance during use   | 1600 Pa  |
| Process temperature   | 20 °C  |
| Duration and Frequency of activity  | 480 min 5 days per week  |
| Indoor/Outdoor  | Indoor   |
| Risk Management Measures  |  |
| Provide a good standard of general ventilation (not less than 3 - 5 air changes per hour)   | Effectiveness: 30 %  |
| Ensure minimization of manual phases Avoid frequent and direct contact with substance. Supervision in place to check that the RMMs in place are being used correctly and OCs followed. Avoid splashing. |  |
| Wear suitable working clothes.  |  |
| Use suitable eye protection.  |  |
| Use suitable chemically resistant gloves.   |  |
| Exposure estimate and reference to it   |  |
| Assessment method   | EASY TRA v4.2, ECETOC TRA v3.0, Worker  Worker - inhalation, long-term - local |
| Exposure estimate   | 216,188 mg/m³  |
| Risk Characterization Ratio (RCR)   | 0,697381   |
| Assessment method   | Qualitative assessment Worker - dermal   |
| Guidance to Downstream Users  | •  |
| For scaling see: http://www.ecetoc.org/t  | ra   |

to Regulation (EC) No 1907/2006.

Date / Revised: 11.09.2023 Version: 5.0
Date previous version: 14.11.2022 Previous version: 4.0

Date / First version: 05.06.2014

Product: ISOBUTANOL

(ID no. 30034839/SDS\_GEN\_RO/EN)

Date of print 21.10.2025

| Contributing exposure scenario              |  |
|---|--|
|   | PROC19: Manual activities involving hand contact |
| Use descriptors covered                     | Use domain: professional                         |
| Operational conditions                      |  |
|   | 2-methylpropan-1-ol                              |
| Concentration of the substance              | Content: >= 0 % - <= 100 %                       |
| Physical state                              | liquid   |
| Vapour pressure of the substance during use | 1600 Pa  |
| Process temperature                         | 20 °C  |
| Duration and Frequency of activity          | 480 min 5 days per week                          |
| Indoor/Outdoor                              | Indoor   |
| Risk Management Measures                    |  |
| Provide a good standard of general          |  |
| ventilation (not less than 3 - 5 air        | Effectiveness: 30 %                              |
| changes per hour)                           |  |
| Ensure minimization of manual               |  |
| phases Avoid frequent and direct            |  |
| contact with substance. Supervision in      |  |
| place to check that the RMMs in place       |  |
| are being used correctly and OCs            |  |
| followed. Avoid splashing.                  |  |
| Wear suitable working clothes.              |  |
| Use suitable eye protection.                |  |
| Use suitable chemically resistant           |  |
| gloves.                                     |  |
| Exposure estimate and reference to it       |  |
| Assessment method                           | EASY TRA v4.2, ECETOC TRA v3.0, Worker           |
| F   | Worker - inhalation, long-term - local           |
| Exposure estimate                           | 216,188 mg/m³                                    |
| Risk Characterization Ratio (RCR)           | 0,697381   |
| Assessment method                           | Qualitative assessment                           |
| Guidance to Downstream Users                | Worker - dermal                                  |
| For scaling see: http://www.ecetoc.org/t    | ra   |
| i or scaling see. http://www.ecetoc.org/t   | ıa   |

\* \* \* \* \* \* \* \* \* \* \* \* \* \* \* \*

#### 12. Short title of exposure scenario

Use in Coatings, Use in Paints, Use in Printing inks, Use in Adhesives, (consumer use) ERC8a, ERC8d; PC1, PC4, PC9a, PC9c, PC15, PC18, PC23, PC24, PC31

to Regulation (EC) No 1907/2006.

Date / Revised: 11.09.2023 Version: 5.0
Date previous version: 14.11.2022 Previous version: 4.0

Date / First version: 05.06.2014

Product: ISOBUTANOL

(ID no. 30034839/SDS\_GEN\_RO/EN)

Date of print 21.10.2025

## Control of exposure and risk management measures

| Contributing exposure scenario |  |
|--------------------------------|--|
| Use descriptors covered        | ERC8a: Widespread use of non-reactive processing aid (no inclusion into or onto article, indoor) As no environmental hazard was identified no environmental-related exposure assessment and risk characterization was performed. |
| Operational conditions         |  |

| Contributing exposure scenario |   |
|--------------------------------|---|
| Use descriptors covered        | ERC8d: Widespread use of non-reactive processing aid (no inclusion into or onto article, outdoor) As no environmental hazard was identified no environmental-related exposure assessment and risk characterization was performed. |
| Operational conditions         | ·   |

| Use descriptors covered                       | PC1_1: Subcategory: Glues, hobby use                |  |
|---|---|--|
| Operational conditions                        |   |  |
|   | 2-methylpropan-1-ol                                 |  |
| Concentration of the substance                | Content: >= 0 % - <= 30 %                           |  |
| Vapour pressure of the substance              | 1600 Pa   |  |
| during use                                    |   |  |
| Process temperature                           | 20 °C   |  |
| Duration and Frequency of activity            | Exposure duration: 4 h 365 uses per year            |  |
| Room size                                     | 20 m3   |  |
| Ventilation rate per hour                     | 0,6   |  |
| Exposed skin area                             | Fingertips (36 cm2)                                 |  |
| Uptake fraction dermal                        | 100 %   |  |
|   | Amount per use 9 g Relevant for inhalative exposure |  |
|   | estimates   |  |
| Exposure estimate and reference to its source |   |  |
| Assessment method                             | EASY TRA v4.2, ECETOC TRA, Consumer                 |  |
|   | Consumer - inhalation, long-term - systemic         |  |
| Exposure estimate                             | 39,7059 mg/m³                                       |  |
| Risk Characterization Ratio (RCR)             | 0,721925  |  |
| Guidance to Downstream Users                  |   |  |
| For scaling see: http://www.ecetoc.org        | /tra  |  |

#### Contributing exposure scenario

to Regulation (EC) No 1907/2006.

Date / Revised: 11.09.2023 Version: 5.0
Date previous version: 14.11.2022 Previous version: 4.0

Date / First version: 05.06.2014 Product: **ISOBUTANOL** 

(ID no. 30034839/SDS\_GEN\_RO/EN)

| Use descriptors covered  | PC1_2: Subcategory: Glues DIY-use (carpet glue, tile glue, wood parquet glue)       |  |
|--|---|--|
| Operational conditions   | 1   |  |
| Concentration of the substance   | 2-methylpropan-1-ol<br>Content: >= 0 % - <= 2 %                                     |  |
| Vapour pressure of the substance during use  | 1600 Pa   |  |
| Process temperature  | 20 °C   |  |
| Duration and Frequency of activity   | Exposure duration: 75 min Relevant for inhalative exposure estimates                |  |
| Duration and Frequency of activity   | Application duration: 75 min Relevant for inhalative exposure estimates             |  |
| Duration and Frequency of activity   | < 1 uses per year   |  |
| Room size  | 58 m3   |  |
| Ventilation rate per hour  | 2,5   |  |
| Temperature (Application)  | 20 °C   |  |
| body weight  | 65 kg   |  |
| Release area   | 40000 cm <sup>2</sup>   |  |
|  | Release area is constant  |  |
| Release duration   | 75 min  |  |
|  | Relevant for inhalative exposure estimates  |  |
| Exposure estimate and reference to   |   |  |
| Assessment method  | EASY TRA v4.2, ConsExpo v4.1, Inhalation model: exposure to vapour - evaporation    |  |
| <u> </u>   | Consumer - inhalation, long-term - systemic   |  |
| Exposure estimate  | 49,4508 mg/m³   |  |
| Risk Characterization Ratio (RCR)  | 0,899106  |  |
|  | The exposure calculation is based on the mean concentration on the day of exposure. |  |
| Guidance to Downstream Users   |   |  |
| For scaling see: http://www.rivm.nl/en/healthanddisease/productsafety/ConsExpo.jsp |   |  |

| Contributing exposure scenario              |   |
|---|---|
| Use descriptors covered                     | PC1_3: Subcategory: Glue from spray             |
| Operational conditions                      |   |
| Concentration of the substance              | 2-methylpropan-1-ol<br>Content: >= 0 % - <= 6 % |
| Vapour pressure of the substance during use | 1600 Pa   |
| Process temperature                         | 20 °C   |

to Regulation (EC) No 1907/2006.

Date / Revised: 11.09.2023 Version: 5.0
Date previous version: 14.11.2022 Previous version: 4.0

Date / First version: 05.06.2014

Product: ISOBUTANOL

(ID no. 30034839/SDS\_GEN\_RO/EN)

| Duration and Frequency of activity   | Exposure duration: 240 min                      |
|--|---|
| Duration and Frequency of activity   | Relevant for inhalative exposure estimates      |
| Duration and Frequency of activity   | Application duration: 3 min                     |
| Duration and Frequency of activity   | Relevant for inhalative exposure estimates      |
| Duration and Frequency of activity   | 12 uses per year                                |
| Room size  | 20 m3   |
| Ventilation rate per hour  | 0,6   |
| Temperature (Application)  | 20 °C   |
| body weight  | 65 kg   |
| Release area   | 20000 cm <sup>2</sup>                           |
|  | Release area is constant                        |
| Release duration   | 3 min   |
|  | Relevant for inhalative exposure estimates      |
| Exposure estimate and reference to   | its source                                      |
| Assessment method  | EASY TRA v4.2, ConsExpo v4.1, Inhalation model: |
| Assessmentmethod   | exposure to vapour - evaporation                |
|  | Consumer - inhalation, long-term - systemic     |
| Exposure estimate  | 38,644 mg/m³                                    |
| Risk Characterization Ratio (RCR)  | 0,702618  |
|  | The exposure calculation is based on the mean   |
|  | concentration on the day of exposure.           |
| Guidance to Downstream Users   |   |
| For scaling see: http://www.rivm.nl/en/healthanddisease/productsafety/ConsExpo.jsp |   |

| Contributing exposure scenario              |   |
|---|---|
| Use descriptors covered                     | PC1_4: Subcategory: Sealant   |
| Operational conditions                      |   |
| Concentration of the substance              | 2-methylpropan-1-ol<br>Content: >= 0 % - <= 12 %                        |
| Vapour pressure of the substance during use | 1600 Pa   |
| Process temperature                         | 20 °C   |
| Duration and Frequency of activity          | Exposure duration: 45 min Relevant for inhalative exposure estimates    |
| Duration and Frequency of activity          | Application duration: 30 min Relevant for inhalative exposure estimates |
| Duration and Frequency of activity          | 3 uses per year   |
| Room size                                   | 10 m3   |
| Ventilation rate per hour                   | 2   |
| Temperature (Application)                   | 20 °C   |
| body weight                                 | 65 kg   |

to Regulation (EC) No 1907/2006.

Date / Revised: 11.09.2023 Version: 5.0
Date previous version: 14.11.2022 Previous version: 4.0

Date / First version: 05.06.2014 Product: **ISOBUTANOL** 

(ID no. 30034839/SDS\_GEN\_RO/EN)

Date of print 21.10.2025

| Release area   | 250 cm <sup>2</sup>                             |
|--|---|
|  | Release area increases over time                |
| Release duration   | 30 min  |
|  | Relevant for inhalative exposure estimates      |
| Exposure estimate and reference to   | its source                                      |
| Assessment method  | EASY TRA v4.2, ConsExpo v4.1, Inhalation model: |
|  | exposure to vapour - evaporation                |
|  | Consumer - inhalation, long-term - systemic     |
| Exposure estimate  | 11,549 mg/m³                                    |
| Risk Characterization Ratio (RCR)  | 0,209982  |
|  | The exposure calculation is based on the mean   |
|  | concentration on the day of exposure.           |
| Guidance to Downstream Users   |   |
| For scaling see: http://www.rivm.nl/en/healthanddisease/productsafety/ConsExpo.jsp |   |

| Contributing exposure scenario   |   |  |
|--|---|--|
| Use descriptors covered  | PC4: Anti-Freeze and De-icing products.   |  |
| Operational conditions   |   |  |
| Concentration of the substance   | 2-methylpropan-1-ol<br>Content: >= 0 % - <= 10 %  |  |
| Vapour pressure of the substance during use  | 1600 Pa   |  |
| Process temperature  | 20 °C   |  |
| Duration and Frequency of activity   | Exposure duration: 10 min Relevant for inhalative exposure estimates                      |  |
| Duration and Frequency of activity   | 1 uses per day  |  |
| Room size  | 34 m3   |  |
| Ventilation rate per hour  | 1,5   |  |
| body weight  | 65 kg   |  |
|  | Amount per use 2.000 g Relevant for inhalative exposure estimates                         |  |
| Exposure estimate and reference to   |   |  |
| Assessment method  | EASY TRA v4.2, ConsExpo v4.1, Inhalation model: evaporation model - instantaneous release |  |
|  | Consumer - inhalation, long-term - systemic   |  |
| Exposure estimate  | 36,1512 mg/m³   |  |
| Risk Characterization Ratio (RCR)  | 0,657294  |  |
|  | The exposure calculation is based on the mean concentration on the day of exposure.       |  |
| Guidance to Downstream Users   |   |  |
| For scaling see: http://www.rivm.nl/en/healthanddisease/productsafety/ConsExpo.jsp |   |  |

## Contributing exposure scenario

to Regulation (EC) No 1907/2006.

Date / Revised: 11.09.2023 Version: 5.0
Date previous version: 14.11.2022 Previous version: 4.0

Date / First version: 05.06.2014 Product: **ISOBUTANOL** 

(ID no. 30034839/SDS\_GEN\_RO/EN)

| Use descriptors covered                     | PC4: Anti-Freeze and De-icing products.                       |  |
|---|---|--|
| Operational conditions                      |   |  |
| •   | 2-methylpropan-1-ol   |  |
| Concentration of the substance              | Content: >= 0 % - <= 50 %                                     |  |
| Vapour pressure of the substance during use | 1600 Pa   |  |
| Process temperature                         | 20 °C   |  |
| Duration and Frequency of activity          | Exposure duration: 15 min                                     |  |
| Duration and Frequency of activity          | Relevant for inhalative exposure estimates                    |  |
| Duration and Frequency of activity          | 1 uses per day  |  |
| Room size                                   | 34 m3   |  |
| Ventilation rate per hour                   | 1,5   |  |
| body weight                                 | 65 kg   |  |
|   | Amount per use 4 g Relevant for inhalative exposure estimates |  |
| Exposure estimate and reference to it       | ts source   |  |
| Assessment method                           | EASY TRA v4.2, ConsExpo v4.1, Inhalation model:               |  |
| A33633ment method                           | evaporation model - instantaneous release                     |  |
|   | Consumer - inhalation, long-term - systemic                   |  |
| Exposure estimate                           | 0,5111 mg/m³  |  |
| Risk Characterization Ratio (RCR)           | 0,009292  |  |
|   | The exposure calculation is based on the mean                 |  |
|   | concentration on the day of exposure.                         |  |
| Guidance to Downstream Users                |   |  |
| For scaling see: http://www.rivm.nl/en/h    | ealthanddisease/productsafety/ConsExpo.jsp                    |  |

| Contributing exposure scenario              |  |
|---|--|
| Use descriptors covered                     | PC4: Anti-Freeze and De-icing products.                              |
| Operational conditions                      |  |
| Concentration of the substance              | 2-methylpropan-1-ol<br>Content: >= 0 % - <= 50 %                     |
| Vapour pressure of the substance during use | 1600 Pa  |
| Process temperature                         | 20 °C  |
| Duration and Frequency of activity          | Exposure duration: 10 min Relevant for inhalative exposure estimates |
| Duration and Frequency of activity          | 1 uses per day   |
| Room size                                   | 34 m3  |
| Ventilation rate per hour                   | 1,5  |

to Regulation (EC) No 1907/2006.

Date / Revised: 11.09.2023 Version: 5.0
Date previous version: 14.11.2022 Previous version: 4.0
Date / First version: 05.06.2014

Product: **ISOBUTANOL** 

(ID no. 30034839/SDS\_GEN\_RO/EN)

| body weight  | 65 kg   |
|--|---|
|  | Amount per use 15 g Relevant for inhalative exposure estimates                            |
| Exposure estimate and reference to its source                                      |   |
| Assessment method  | EASY TRA v4.2, ConsExpo v4.1, Inhalation model: evaporation model - instantaneous release |
|  | Consumer - inhalation, long-term - systemic   |
| Exposure estimate  | 1,3557 mg/m³  |
| Risk Characterization Ratio (RCR)  | 0,024649  |
|  | The exposure calculation is based on the mean   |
|  | concentration on the day of exposure.   |
| Guidance to Downstream Users   |   |
| For scaling see: http://www.rivm.nl/en/healthanddisease/productsafety/ConsExpo.jsp |   |

| Contributing exposure scenario              |  |
|---|--|
| Use descriptors covered                     | PC9a_1, PC15_1: Subcategory: Waterborne latex wall paint                         |
| Operational conditions                      |  |
| Concentration of the substance              | 2-methylpropan-1-ol<br>Content: >= 0 % - <= 1,5 %                                |
| Vapour pressure of the substance during use | 1600 Pa  |
| Process temperature                         | 20 °C  |
| Duration and Frequency of activity          | Exposure duration: 132 min Relevant for inhalative exposure estimates            |
| Duration and Frequency of activity          | Application duration: 120 min Relevant for inhalative exposure estimates         |
| Duration and Frequency of activity          | 1 uses per year  |
| Room size                                   | 20 m3  |
| Ventilation rate per hour                   | 0,6  |
| Temperature (Application)                   | 20 °C  |
| body weight                                 | 65 kg  |
| Release area                                | 100000 cm <sup>2</sup>   |
|   | Release area increases over time   |
| Release duration                            | 120 min  |
|   | Relevant for inhalative exposure estimates                                       |
| Exposure estimate and reference to          | its source   |
| Assessment method                           | EASY TRA v4.2, ConsExpo v4.1, Inhalation model: exposure to vapour - evaporation |
|   | Consumer - inhalation, long-term - systemic                                      |
| Exposure estimate                           | 27,5237 mg/m <sup>3</sup>  |
| Risk Characterization Ratio (RCR)           | 0,500431   |

to Regulation (EC) No 1907/2006.

Date / Revised: 11.09.2023 Version: 5.0
Date previous version: 14.11.2022 Previous version: 4.0

Date / First version: 05.06.2014

Product: ISOBUTANOL

(ID no. 30034839/SDS\_GEN\_RO/EN)

| The exposure calculation is based on the mean concentration on the day of exposure. |  |
|---|--|
| Guidance to Downstream Users  |  |
| For scaling see: http://www.rivm.nl/en/healthanddisease/productsafety/ConsExpo.jsp  |  |

| Contributing exposure scenario   |  |  |
|--|--|--|
| Use descriptors covered  | PC9a_2, PC15_2: Subcategory: Solvent rich, high solid, water borne paint |  |
| Operational conditions   |  |  |
|  | 2-methylpropan-1-ol  |  |
| Concentration of the substance   | Content: >= 0 % - <= 2 %   |  |
| Vapour pressure of the substance   | 1600 Pa  |  |
| during use   | 00.00  |  |
| Process temperature  | 20 °C  |  |
| Duration and Fraguency of activity   | Exposure duration: 132 min   |  |
| Duration and Frequency of activity   | Relevant for inhalative exposure estimates                               |  |
| Duration and Frequency of activity   | Application duration: 120 min  |  |
| Duration and Frequency of activity   | Relevant for inhalative exposure estimates                               |  |
| Duration and Frequency of activity   | 1 uses per year  |  |
| Room size  | 20 m3  |  |
| Ventilation rate per hour  | 0,6  |  |
| Temperature (Application)  | 20 °C  |  |
| body weight  | 65 kg  |  |
| Release area   | 100000 cm <sup>2</sup>   |  |
|  | Release area increases over time   |  |
| Release duration   | 120 min  |  |
|  | Relevant for inhalative exposure estimates                               |  |
| Exposure estimate and reference to   |  |  |
| Assessment method  | EASY TRA v4.2, ConsExpo v4.1, Inhalation model:                          |  |
| Assessment method  | exposure to vapour - evaporation   |  |
|  | Consumer - inhalation, long-term - systemic                              |  |
| Exposure estimate  | 43,6319 mg/m³  |  |
| Risk Characterization Ratio (RCR)  | 0,793308   |  |
|  | The exposure calculation is based on the mean                            |  |
|  | concentration on the day of exposure.                                    |  |
| Guidance to Downstream Users   |  |  |
| For scaling see: http://www.rivm.nl/en/healthanddisease/productsafety/ConsExpo.jsp |  |  |

| Contributing exposure scenario |  |
|--------------------------------|--|
| Use descriptors covered        | PC9a_3, PC15_3: Subcategory: Aerosol spray can |
| Operational conditions         |  |
| Concentration of the substance | 2-methylpropan-1-ol                            |

to Regulation (EC) No 1907/2006.

Date / Revised: 11.09.2023 Version: 5.0
Date previous version: 14.11.2022 Previous version: 4.0

Date / First version: 05.06.2014 Product: **ISOBUTANOL** 

(ID no. 30034839/SDS\_GEN\_RO/EN)

|   | Content: >= 0 % - <= 25 %   |
|---|---|
| Vapour pressure of the substance during use   | 1600 Pa   |
| Process temperature                           | 20 °C   |
| Duration and Frequency of activity            | Exposure duration: 20 min Relevant for inhalative exposure estimates                      |
| Duration and Frequency of activity            | 2 uses per year   |
| Room size                                     | 34 m3   |
| Ventilation rate per hour                     | 1,5   |
| body weight                                   | 65 kg   |
|   | Amount per use 400 g Relevant for inhalative exposure estimates                           |
| Exposure estimate and reference to its source |   |
| Assessment method                             | EASY TRA v4.2, ConsExpo v4.1, Inhalation model: evaporation model - instantaneous release |
|   | Consumer - inhalation, long-term - systemic   |
| Exposure estimate                             | 32,1529 mg/m <sup>3</sup>   |
| Risk Characterization Ratio (RCR)             | 0,584598  |
|   | The exposure calculation is based on the mean concentration on the day of exposure.       |
| Guidance to Downstream Users                  |   |
| For scaling see: http://www.rivm.nl/en/h      | ealthanddisease/productsafety/ConsExpo.jsp  |

| Contributing exposure scenario              |   |
|---|---|
| Use descriptors covered                     | PC9a_4, PC15_4: Subcategory: Removers (paint-, glue-, wall paper-, sealant-remover) |
| Operational conditions                      |   |
| Concentration of the substance              | 2-methylpropan-1-ol<br>Content: >= 0 % - <= 3 %                                     |
| Vapour pressure of the substance during use | 1600 Pa   |
| Process temperature                         | 20 °C   |
| Duration and Frequency of activity          | Exposure duration: 240 min Relevant for inhalative exposure estimates               |
| Duration and Frequency of activity          | Application duration: 240 min Relevant for inhalative exposure estimates            |
| Duration and Frequency of activity          | < 1 uses per year   |
| Room size                                   | 30 m3   |
| Ventilation rate per hour                   | 1,5   |
| Temperature (Application)                   | 20 °C   |

to Regulation (EC) No 1907/2006.

Date / Revised: 11.09.2023 Version: 5.0
Date previous version: 14.11.2022 Previous version: 4.0

Date / First version: 05.06.2014 Product: **ISOBUTANOL** 

(ID no. 30034839/SDS\_GEN\_RO/EN)

| body weight  | 65 kg   |  |
|--|---|--|
| Release area   | 50000 cm <sup>2</sup>                           |  |
|  | Release area increases over time                |  |
| Release duration   | 240 min   |  |
|  | Relevant for inhalative exposure estimates      |  |
| Exposure estimate and reference to its source                                      |   |  |
| Assessment method  | EASY TRA v4.2, ConsExpo v4.1, Inhalation model: |  |
| Assessment method  | exposure to vapour - evaporation                |  |
|  | Consumer - inhalation, long-term - systemic     |  |
| Exposure estimate  | 46,3115 mg/m <sup>3</sup>                       |  |
| Risk Characterization Ratio (RCR)  | 0,842028  |  |
|  | The exposure calculation is based on the mean   |  |
|  | concentration on the day of exposure.           |  |
| Guidance to Downstream Users   |   |  |
| For scaling see: http://www.rivm.nl/en/healthanddisease/productsafety/ConsExpo.jsp |   |  |

| Contributing exposure scenario              |  |
|---|--|
| Use descriptors covered                     | PC9c: Finger paints                              |
| Operational conditions                      |  |
| Concentration of the substance              | 2-methylpropan-1-ol<br>Content: >= 0 % - <= 15 % |
| Vapour pressure of the substance during use | 1600 Pa  |
| Process temperature                         | 20 °C  |
| Duration and Frequency of activity          | 365 uses per year                                |
| Exposed skin area                           | Both hands (820 cm <sup>2</sup> )                |
| Uptake fraction dermal                      | 100 %  |
| Uptake fraction oral                        | 100 %  |

| Contributing exposure scenario              |   |
|---|---|
| Use descriptors covered                     | PC15: Non-metal-surface treatment products.       |
| Operational conditions                      |   |
| Concentration of the substance              | 2-methylpropan-1-ol<br>Content: >= 0 % - <= 1,5 % |
| Vapour pressure of the substance during use | 1600 Pa   |
| Process temperature                         | 20 °C   |
| Duration and Frequency of activity          | Exposure duration: 132 min                        |

to Regulation (EC) No 1907/2006.

Date / Revised: 11.09.2023 Version: 5.0
Date previous version: 14.11.2022 Previous version: 4.0

Date / First version: 05.06.2014 Product: **ISOBUTANOL** 

(ID no. 30034839/SDS\_GEN\_RO/EN)

|  | Relevant for inhalative exposure estimates      |
|--|---|
| Duration and Frequency of activity   | Application duration: 120 min                   |
|  | Relevant for inhalative exposure estimates      |
| Duration and Frequency of activity   | 1 uses per year                                 |
| Room size  | 20 m3   |
| Ventilation rate per hour  | 0,6   |
| Temperature (Application)  | 20 °C   |
| body weight  | 65 kg   |
| Release area   | 100000 cm <sup>2</sup>                          |
|  | Release area increases over time                |
| Release duration   | 120 min   |
|  | Relevant for inhalative exposure estimates      |
| Exposure estimate and reference to its source                                      |   |
| Assessment method  | EASY TRA v4.2, ConsExpo v4.1, Inhalation model: |
| Assessment method  | exposure to vapour - evaporation                |
|  | Consumer - inhalation, long-term - systemic     |
| Exposure estimate  | 27,5237 mg/m³                                   |
| Risk Characterization Ratio (RCR)  | 0,500431  |
|  | The exposure calculation is based on the mean   |
|  | concentration on the day of exposure.           |
| Guidance to Downstream Users   |   |
| For scaling see: http://www.rivm.nl/en/healthanddisease/productsafety/ConsExpo.jsp |   |

| Contributing exposure scenario              |  |  |
|---|--|--|
| Use descriptors covered                     | PC15: Non-metal-surface treatment products.                              |  |
| Operational conditions                      |  |  |
| Concentration of the substance              | 2-methylpropan-1-ol<br>Content: >= 0 % - <= 2 %                          |  |
| Vapour pressure of the substance during use | 1600 Pa  |  |
| Process temperature                         | 20 °C  |  |
| Duration and Frequency of activity          | Exposure duration: 132 min Relevant for inhalative exposure estimates    |  |
| Duration and Frequency of activity          | Application duration: 120 min Relevant for inhalative exposure estimates |  |
| Duration and Frequency of activity          | 1 uses per year  |  |
| Room size                                   | 20 m3  |  |
| Ventilation rate per hour                   | 0,6  |  |
| Temperature (Application)                   | 20 °C  |  |
| body weight                                 | 65 kg  |  |
| Release area                                | 100000 cm <sup>2</sup>   |  |

Page: 82/131

BASF safety data sheet. This is a translation of the country-specific safety data sheet into a language other than that required by law. This document does not replace the safety data sheet provided according

to Regulation (EC) No 1907/2006.

Date / Revised: 11.09.2023 Version: 5.0
Date previous version: 14.11.2022 Previous version: 4.0

Date / First version: 05.06.2014 Product: **ISOBUTANOL** 

(ID no. 30034839/SDS\_GEN\_RO/EN)

|  | Release area increases over time                |
|--|---|
| Release duration   | 120 min   |
|  | Relevant for inhalative exposure estimates      |
| Exposure estimate and reference to   | its source                                      |
| Assessment method  | EASY TRA v4.2, ConsExpo v4.1, Inhalation model: |
|  | exposure to vapour - evaporation                |
|  | Consumer - inhalation, long-term - systemic     |
| Exposure estimate  | 43,6319 mg/m³                                   |
| Risk Characterization Ratio (RCR)  | 0,793308  |
|  | The exposure calculation is based on the mean   |
|  | concentration on the day of exposure.           |
| Guidance to Downstream Users   |   |
| For scaling see: http://www.rivm.nl/en/healthanddisease/productsafety/ConsExpo.jsp |   |

| Contributing exposure scenario   |   |  |
|--|---|--|
| Use descriptors covered  | PC15: Non-metal-surface treatment products.                     |  |
| Operational conditions   |   |  |
|  | 2-methylpropan-1-ol   |  |
| Concentration of the substance   | Content: >= 0 % - <= 25 %                                       |  |
| Vapour pressure of the substance during use  | 1600 Pa   |  |
| Process temperature  | 20 °C   |  |
|  | Exposure duration: 20 min                                       |  |
| Duration and Frequency of activity   | Relevant for inhalative exposure estimates                      |  |
| Duration and Frequency of activity   | 2 uses per year   |  |
| Room size  | 34 m3   |  |
| Ventilation rate per hour  | 1,5   |  |
| body weight  | 65 kg   |  |
|  | Amount per use 400 g Relevant for inhalative exposure estimates |  |
| Exposure estimate and reference to   | its source  |  |
| Assessment method  | EASY TRA v4.2, ConsExpo v4.1, Inhalation model:                 |  |
| Assessment method  | evaporation model - instantaneous release                       |  |
|  | Consumer - inhalation, long-term - systemic                     |  |
| Exposure estimate  | 32,1529 mg/m <sup>3</sup>                                       |  |
| Risk Characterization Ratio (RCR)  | 0,584598  |  |
|  | The exposure calculation is based on the mean                   |  |
|  | concentration on the day of exposure.                           |  |
| Guidance to Downstream Users   |   |  |
| For scaling see: http://www.rivm.nl/en/healthanddisease/productsafety/ConsExpo.jsp |   |  |

| Contributing exposure scenario |   |
|--------------------------------|---|
| Use descriptors covered        | PC15: Non-metal-surface treatment products. |

to Regulation (EC) No 1907/2006.

Date / Revised: 11.09.2023 Version: 5.0
Date previous version: 14.11.2022 Previous version: 4.0

Date / First version: 05.06.2014 Product: **ISOBUTANOL** 

(ID no. 30034839/SDS\_GEN\_RO/EN)

| Operational conditions   |   |  |
|--|---|--|
| •  | 2-methylpropan-1-ol                             |  |
| Concentration of the substance   | Content: >= 0 % - <= 3 %                        |  |
|  |   |  |
| Vapour pressure of the substance   | 1600 Pa   |  |
| during use   |   |  |
| Process temperature  | 20 °C   |  |
| 1 100000 tomporatare   |   |  |
| Duration and Frequency of activity   | Exposure duration: 240 min                      |  |
| 2 di dicerio di di ci                          | Relevant for inhalative exposure estimates      |  |
| Duration and Frequency of activity   | Application duration: 240 min                   |  |
|  | Relevant for inhalative exposure estimates      |  |
| Duration and Frequency of activity   | < 1 uses per year                               |  |
|  | 000   |  |
| Room size  | 30 m3   |  |
| Ventilation rate per hour  | 1,5   |  |
| Temperature (Application)  | 20 °C   |  |
| body weight  | 65 kg   |  |
| , ,  | 50000 2   |  |
| Release area   | 50000 cm <sup>2</sup>                           |  |
| D. I   | Release area increases over time                |  |
| Release duration   | 240 min   |  |
|  | Relevant for inhalative exposure estimates      |  |
| Exposure estimate and reference to   |   |  |
| Assessment method  | EASY TRA v4.2, ConsExpo v4.1, Inhalation model: |  |
| 7.00000mont motilou  | exposure to vapour - evaporation                |  |
|  | Consumer - inhalation, long-term - systemic     |  |
| Exposure estimate  | 46,3115 mg/m³                                   |  |
| Risk Characterization Ratio (RCR)  | 0,842028  |  |
|  | The exposure calculation is based on the mean   |  |
|  | concentration on the day of exposure.           |  |
| Guidance to Downstream Users   |   |  |
| For scaling see: http://www.rivm.nl/en/healthanddisease/productsafety/ConsExpo.jsp |   |  |

| Contributing exposure scenario              |   |
|---|---|
| Use descriptors covered                     | PC18: Ink and Toners.   |
| Operational conditions                      |   |
| Concentration of the substance              | 2-methylpropan-1-ol<br>Content: >= 0 % - <= 4 %                       |
| Vapour pressure of the substance during use | 1600 Pa   |
| Process temperature                         | 20 °C   |
| Duration and Frequency of activity          | Exposure duration: 132 min Relevant for inhalative exposure estimates |

to Regulation (EC) No 1907/2006.

Date / Revised: 11.09.2023 Version: 5.0
Date previous version: 14.11.2022 Previous version: 4.0

Date / First version: 05.06.2014 Product: **ISOBUTANOL** 

(ID no. 30034839/SDS\_GEN\_RO/EN)

| Duration and Frequency of activity      | 1 uses per day  |
|---|---|
| Room size                               | 20 m3   |
| Ventilation rate per hour               | 0,6   |
| body weight                             | 65 kg   |
|   | Amount per use 40 g Relevant for inhalative exposure estimates                            |
| Exposure estimate and reference to      | its source  |
| Assessment method                       | EASY TRA v4.2, ConsExpo v4.1, Inhalation model: evaporation model - instantaneous release |
|   | Consumer - inhalation, long-term - systemic   |
| Exposure estimate                       | 4,0718 mg/m³  |
| Risk Characterization Ratio (RCR)       | 0,074033  |
| ,                                       | The exposure calculation is based on the mean   |
|   | concentration on the day of exposure.   |
| Guidance to Downstream Users            | · ·   |
| For scaling see: http://www.rivm.nl/en/ | healthanddisease/productsafety/ConsExpo.jsp   |

| Contributing exposure scenario              |   |  |
|---|---|--|
| Use descriptors covered                     | PC23: Leather tanning, dye, finishing, impregnation and care products.              |  |
| Operational conditions                      |   |  |
| Concentration of the substance              | 2-methylpropan-1-ol<br>Content: >= 0 % - <= 30 %                                    |  |
| Vapour pressure of the substance during use | 1600 Pa   |  |
| Process temperature                         | 20 °C   |  |
| Duration and Frequency of activity          | Exposure duration: 240 min Relevant for inhalative exposure estimates               |  |
| Duration and Frequency of activity          | 1 uses per day  |  |
| body weight                                 | 65 kg   |  |
| Release duration                            | 240 min   |  |
|   | Relevant for inhalative exposure estimates  |  |
| Exposure estimate and reference to          | its source  |  |
| Assessment method                           | EASY TRA v4.2, ConsExpo v4.1, Inhalation model: exposure to vapour - constant rate  |  |
|   | Consumer - inhalation, long-term - systemic   |  |
| Exposure estimate                           | 33,4645 mg/m³   |  |
| Risk Characterization Ratio (RCR)           | 0,608445  |  |
|   | The exposure calculation is based on the mean concentration on the day of exposure. |  |
| Guidance to Downstream Users                |   |  |

to Regulation (EC) No 1907/2006.

Date / Revised: 11.09.2023 Version: 5.0
Date previous version: 14.11.2022 Previous version: 4.0

Date / First version: 05.06.2014

Product: ISOBUTANOL

(ID no. 30034839/SDS\_GEN\_RO/EN)

Date of print 21.10.2025

For scaling see: http://www.rivm.nl/en/healthanddisease/productsafety/ConsExpo.jsp

| Contributing exposure scenario   |   |  |
|----------------------------------|---|--|
| Use descriptors covered          | PC24: Lubricants, Greases and Release Products Exposure of the consumer can be ruled out. Use in closed system is assumed |  |
| Operational conditions           |   |  |
| Vapour pressure of the substance | 1600 Pa   |  |
| during use                       |   |  |
| Process temperature              | 20 °C   |  |

| Contributing exposure scenario     |  |
|------------------------------------|--|
| Hara Jana Matana a sasara I        | PC23_1, PC31_1: Subcategory: Polishes, wax / cream |
| Use descriptors covered            | (floor, furniture, shoes)                          |
| Operational conditions             |  |
|                                    | 2-methylpropan-1-ol                                |
| Concentration of the substance     | Content: >= 0 % - <= 20 %                          |
| Vapour pressure of the substance   | 1600 Pa  |
| during use                         |  |
| Process temperature                | 20 °C  |
| Duration and Fraguancy of activity | Exposure duration: 240 min                         |
| Duration and Frequency of activity | Relevant for inhalative exposure estimates         |
| Duration and Fraguency of activity | Application duration: 90 min                       |
| Duration and Frequency of activity | Relevant for inhalative exposure estimates         |
| Duration and Frequency of activity | 1 uses per year                                    |
| Room size                          | 58 m3  |
| Ventilation rate per hour          | 2,5  |
| Temperature (Application)          | 20 °C  |
| body weight                        | 65 kg  |
| Release area                       | 220000 cm <sup>2</sup>                             |
|                                    | Release area increases over time                   |
| Release duration                   | 90 min   |
|                                    | Relevant for inhalative exposure estimates         |
| Exposure estimate and reference to |  |
|                                    | EASY TRA v4.2, ConsExpo v4.1, Inhalation model:    |
| Assessment method                  | exposure to vapour - evaporation                   |
|                                    | Consumer - inhalation, long-term - systemic        |
| Exposure estimate                  | 31,5875 mg/m³                                      |
| Risk Characterization Ratio (RCR)  | 0,574318   |
|                                    | The exposure calculation is based on the mean      |
|                                    | concentration on the day of exposure.              |

to Regulation (EC) No 1907/2006.

Date / Revised: 11.09.2023 Version: 5.0 Date previous version: 14.11.2022 Previous version: 4.0

Date / First version: 05.06.2014 Product: **ISOBUTANOL** 

(ID no. 30034839/SDS\_GEN\_RO/EN)

Date of print 21.10.2025

# Guidance to Downstream Users For scaling see: http://www.rivm.nl/en/healthanddisease/productsafety/ConsExpo.jsp

| Contributing exposure scenario              |   |
|---|---|
| Use descriptors covered                     | PC23_2, PC31_2: Subcategory: Polishes, spray (furniture, shoes) |
| Operational conditions                      |   |
|   | 2-methylpropan-1-ol   |
| Concentration of the substance              | Content: >= 0 % - <= 20 %                                       |
| Vapour pressure of the substance during use | 1600 Pa   |
| Process temperature                         | 20 °C   |
| Duration and Eroquanay of activity          | Exposure duration: 240 min                                      |
| Duration and Frequency of activity          | Relevant for inhalative exposure estimates                      |
| Duration and Frequency of activity          | Application duration: 90 min                                    |
| Duration and Frequency of activity          | Relevant for inhalative exposure estimates                      |
| Duration and Frequency of activity          | 1 uses per year   |
| Room size                                   | 58 m3   |
| Ventilation rate per hour                   | 2,5   |
| Temperature (Application)                   | 20 °C   |
| body weight                                 | 65 kg   |
| Release area                                | 220000 cm <sup>2</sup>  |
|   | Release area increases over time                                |
| Release duration                            | 90 min  |
|   | Relevant for inhalative exposure estimates                      |
| Exposure estimate and reference to          | its source  |
| Assessment method                           | EASY TRA v4.2, ConsExpo v4.1, Inhalation model:                 |
| Assessment method                           | exposure to vapour - evaporation                                |
|   | Consumer - inhalation, long-term - systemic                     |
| Exposure estimate                           | 31,5875 mg/m³   |
| Risk Characterization Ratio (RCR)           | 0,574318  |
|   | The exposure calculation is based on the mean                   |
|   | concentration on the day of exposure.                           |
| Guidance to Downstream Users                |   |
| For scaling see: http://www.rivm.nl/en/     | healthanddisease/productsafety/ConsExpo.jsp                     |

\* \* \* \* \* \* \* \* \* \* \* \* \* \* \* \*

### 13. Short title of exposure scenario

Use in Coatings, Use in Paints, Use in Printing inks, Use in Adhesives, (use in industrial settings) ERC4; PROC7, PROC10, PROC13

to Regulation (EC) No 1907/2006.

Date / Revised: 11.09.2023 Version: 5.0
Date previous version: 14.11.2022 Previous version: 4.0

Date / First version: 05.06.2014

Product: ISOBUTANOL

(ID no. 30034839/SDS\_GEN\_RO/EN)

Date of print 21.10.2025

# Control of exposure and risk management measures

| Contributing exposure scenario |   |
|--------------------------------|---|
| Use descriptors covered        | ERC4: Use of non-reactive processing aid at industrial site (no inclusion into or onto article) As no environmental hazard was identified no environmental-related exposure assessment and risk characterization was performed. |
| Operational conditions         |   |

| Contributing exposure scenario   |  |
|--|--|
| Use descriptors covered  | PROC7: Industrial spraying Use domain: industrial                      |
| Operational conditions   |  |
| Concentration of the substance   | 2-methylpropan-1-ol<br>Content: >= 0 % - <= 100 %                      |
| Physical state   | liquid   |
| Vapour pressure of the substance during use  | 1600 Pa  |
| Process temperature  | 20 °C  |
| Duration and Frequency of activity   | 480 min 5 days per week  |
| Indoor/Outdoor   | Indoor   |
| Risk Management Measures   |  |
| Ensure minimization of manual phases Supervision in place to check that the RMMs in place are being used correctly and OCs followed. Ensure that the task is being carried out outside the breathing zone of a worker (distance head-product greater than 1m). Regular inspection and maintenance of equipment and machines. |  |
| Ensure that a spraying booth is used.  |  |
| Use suitable eye protection.  Avoid frequent and direct contact with substance.  |  |
| Use suitable chemically resistant  |  |
| gloves.  | ita sauraa   |
| Exposure estimate and reference to   |  |
| Assessment method  | EASY TRA v4.2, Stoffenmanager 8 Worker - inhalation, long-term - local |
| Exposure estimate  | 0,0001 mg/m³   |
| Exposure estimate Risk Characterization Ratio (RCR)  | 0,0001 mg/m³   |
| Nisk Characterization Ratio (RCR)  | 0,00001  |

to Regulation (EC) No 1907/2006.

Date / Revised: 11.09.2023 Version: 5.0
Date previous version: 14.11.2022 Previous version: 4.0

Date / First version: 05.06.2014

Product: ISOBUTANOL

(ID no. 30034839/SDS\_GEN\_RO/EN)

| Assessment method   | Qualitative assessment |
|---|------------------------|
|   | Worker - dermal        |
| Guidance to Downstream Users                                |                        |
| For scaling see: https://www.stoffenmanager.nl/default.aspx |                        |

| Contributing exposure scenario              |   |
|---|---|
| Contributing exposure scenario              | DDOC40: Dallar application or brushing                        |
| Use descriptors covered                     | PROC10: Roller application or brushing Use domain: industrial |
| ose descriptors covered                     | Ose domain. industrial  |
| Operational conditions                      |   |
|   | 2-methylpropan-1-ol   |
| Concentration of the substance              | Content: >= 0 % - <= 100 %                                    |
|   |   |
| Physical state                              | liquid  |
| Vapour pressure of the substance during use | 1600 Pa   |
| Process temperature                         | 20 °C   |
| Duration and Frequency of activity          | 480 min 5 days per week                                       |
| Indoor/Outdoor                              | Indoor  |
| Risk Management Measures                    |   |
| Ensure minimization of manual               |   |
| phases Avoid frequent and direct            |   |
| contact with substance. Supervision in      |   |
| place to check that the RMMs in place       |   |
| are being used correctly and OCs            |   |
| followed. Avoid splashing.                  |   |
| Wear suitable working clothes.              |   |
| Use suitable eye protection.                |   |
| Use suitable chemically resistant           |   |
| gloves.                                     |   |
| Exposure estimate and reference to          | its source  |
| Assessment method                           | EASY TRA v4.2, ECETOC TRA v3.0, Worker                        |
|   | Worker - inhalation, long-term - local                        |
| Exposure estimate                           | 154,42 mg/m³  |
| Risk Characterization Ratio (RCR)           | 0,498129  |
| Assessment method                           | Qualitative assessment  |
|   | Worker - dermal   |
| Guidance to Downstream Users                |   |
| For scaling see: http://www.ecetoc.org/     | tra   |

| Contributing exposure scenario |  |
|--------------------------------|--|
| Use descriptors covered        | PROC13: Treatment of articles by dipping and pouring. Use domain: industrial |
| Operational conditions         |  |
| Concentration of the substance | 2-methylpropan-1-ol  |

to Regulation (EC) No 1907/2006.

Date / Revised: 11.09.2023 Version: 5.0
Date previous version: 14.11.2022 Previous version: 4.0

Date / First version: 05.06.2014

Product: ISOBUTANOL

(ID no. 30034839/SDS\_GEN\_RO/EN)

Date of print 21.10.2025

|   | Content: >= 0 % - <= 100 %             |
|---|--|
| Physical state                              | liquid                                 |
| Vapour pressure of the substance during use | 1600 Pa                                |
| Process temperature                         | 20 °C                                  |
| Duration and Frequency of activity          | 480 min 5 days per week                |
| Indoor/Outdoor                              | Indoor                                 |
| Risk Management Measures                    |  |
| Ensure minimization of manual               |  |
| phases Avoid frequent and direct            |  |
| contact with substance. Supervision in      |  |
| place to check that the RMMs in place       |  |
| are being used correctly and OCs            |  |
| followed. Avoid splashing.                  |  |
| Wear suitable working clothes.              |  |
| Use suitable eye protection.                |  |
| Use suitable chemically resistant           |  |
| gloves.                                     |  |
| Exposure estimate and reference to it       | ts source                              |
| Assessment method                           | EASY TRA v4.2, ECETOC TRA v3.0, Worker |
|   | Worker - inhalation, long-term - local |
| Exposure estimate                           | 154,42 mg/m³                           |
| Risk Characterization Ratio (RCR)           | 0,498129                               |
| Assessment method                           | Qualitative assessment                 |
|   | Worker - dermal                        |
| Guidance to Downstream Users                |  |
| For scaling see: http://www.ecetoc.org/t    | ra                                     |

# 14. Short title of exposure scenario

Use in Coatings, Use in Paints, Use in Printing inks, Use in Adhesives, (use in professional settings) ERC8a, ERC8d; PROC10, PROC11, PROC13, PROC19

### Control of exposure and risk management measures

| Contributing exposure scenario |  |
|--------------------------------|--|
| Use descriptors covered        | ERC8a: Widespread use of non-reactive processing aid (no inclusion into or onto article, indoor) As no environmental hazard was identified no environmental-related exposure assessment and risk characterization was performed. |
| Operational conditions         |  |

to Regulation (EC) No 1907/2006.

Date / Revised: 11.09.2023 Version: 5.0
Date previous version: 14.11.2022 Previous version: 4.0

Date / First version: 05.06.2014 Product: **ISOBUTANOL** 

(ID no. 30034839/SDS\_GEN\_RO/EN)

| Contributing exposure scenario | )   |
|--------------------------------|---|
| Use descriptors covered        | ERC8d: Widespread use of non-reactive processing aid (no inclusion into or onto article, outdoor) As no environmental hazard was identified no environmental-related exposure assessment and risk characterization was performed. |
| Operational conditions         |   |

| Contributing exposure scenario              |  |
|---|--|
|   | PROC10: Roller application or brushing |
| Use descriptors covered                     | Use domain: professional               |
| Operational conditions                      | L                                      |
|   | 2-methylpropan-1-ol                    |
| Concentration of the substance              | Content: >= 0 % - <= 100 %             |
| Physical state                              | liquid                                 |
| Vapour pressure of the substance during use | 1600 Pa                                |
| Process temperature                         | 20 °C                                  |
| Duration and Frequency of activity          | 480 min 5 days per week                |
| Indoor/Outdoor                              | Indoor                                 |
| Risk Management Measures                    |  |
| Provide a good standard of general          |  |
| ventilation (not less than 3 - 5 air        | Effectiveness: 30 %                    |
| changes per hour)                           |  |
| Ensure minimization of manual               |  |
| phases Avoid frequent and direct            |  |
| contact with substance. Supervision in      |  |
| place to check that the RMMs in place       |  |
| are being used correctly and OCs            |  |
| followed. Avoid splashing.                  |  |
| Wear suitable working clothes.              |  |
| Use suitable eye protection.                |  |
| Use suitable chemically resistant           |  |
| gloves.                                     |  |
| Exposure estimate and reference to          |  |
| Assessment method                           | EASY TRA v4.2, ECETOC TRA v3.0, Worker |
|   | Worker - inhalation, long-term - local |
| Exposure estimate                           | 216,188 mg/m³                          |
| Risk Characterization Ratio (RCR)           | 0,697381                               |
| Assessment method                           | Qualitative assessment                 |
|   | Worker - dermal                        |
| Guidance to Downstream Users                |  |

to Regulation (EC) No 1907/2006.

Date / Revised: 11.09.2023 Version: 5.0
Date previous version: 14.11.2022 Previous version: 4.0

Date / First version: 05.06.2014

Product: **ISOBUTANOL** 

(ID no. 30034839/SDS\_GEN\_RO/EN)

Date of print 21.10.2025

For scaling see: http://www.ecetoc.org/tra

| Contributing exposure scenario              |  |
|---|--|
|   | PROC11: Non industrial spraying        |
| Use descriptors covered                     | Use domain: professional               |
| Operational conditions                      |  |
| Operational containons                      | 2-methylpropan-1-ol                    |
| Concentration of the substance              | Content: >= 0 % - <= 100 %             |
| Physical state                              | liquid                                 |
| Vapour pressure of the substance during use | 1600 Pa                                |
| Process temperature                         | 20 °C                                  |
| Duration and Frequency of activity          | 480 min 5 days per week                |
| Indoor/Outdoor                              | Indoor                                 |
| Risk Management Measures                    |  |
| Ensure minimization of manual               |  |
| phases Supervision in place to check        |  |
| that the RMMs in place are being            |  |
| used correctly and OCs followed.            |  |
| Clean equipment and the work area           |  |
| every day. Regular inspection and           |  |
| maintenance of equipment and                |  |
| machines.                                   |  |
| Ensure that a spraying booth is used.       |  |
| Use suitable eye protection.                |  |
| Avoid frequent and direct contact with      |  |
| substance.                                  |  |
| Use suitable chemically resistant           |  |
| gloves.                                     |  |
| Exposure estimate and reference to          | ts source                              |
| Assessment method                           | EASY TRA v4.2, Stoffenmanager 8        |
|   | Worker - inhalation, long-term - local |
| Exposure estimate                           | 0,0001 mg/m³                           |
| Risk Characterization Ratio (RCR)           | 0,000001                               |
| Assessment method                           | Qualitative assessment                 |
|   | Worker - dermal                        |
| Guidance to Downstream Users                | 1                                      |
| For scaling see: https://www.stoffenmar     | nager.nl/default.aspx                  |

| Contributing exposure scenario |                                 |
|--------------------------------|---------------------------------|
|                                | PROC11: Non industrial spraying |
| Use descriptors covered        | Use domain: professional        |
| ·                              | ·                               |
| Operational conditions         |                                 |

to Regulation (EC) No 1907/2006.

Date / Revised: 11.09.2023 Version: 5.0
Date previous version: 14.11.2022 Previous version: 4.0
Date / First version: 05.06.2014

Product: **ISOBUTANOL** 

(ID no. 30034839/SDS\_GEN\_RO/EN)

|   | 2-methylpropan-1-ol                     |
|---|---|
| Concentration of the substance                  | Content: >= 0 % - <= 10 %               |
|   |   |
| Physical state                                  | liquid                                  |
| Vapour pressure of the substance                | 1600 Pa                                 |
| during use                                      |   |
| Process temperature                             | 20 °C                                   |
| Duration and Frequency of activity              | 480 min 5 days per week                 |
| Indoor/Outdoor                                  | Indoor                                  |
|   | Large workrooms only                    |
| Application rate                                | < 3 l/min                               |
| Risk Management Measures                        |   |
| Ensure that the task is not carried out         |   |
| overhead.                                       |   |
| Use equipment with a fixed capturing            |   |
| hood exhaust ventilation.                       |   |
| Ensure that general housekeeping is             |   |
| in place  |   |
| Ensure minimization of manual                   |   |
| phases Avoid frequent and direct                |   |
| contact with substance. Supervision in          |   |
| place to check that the RMMs in place           |   |
| are being used correctly and OCs                |   |
| followed. Avoid splashing.                      |   |
| Wear suitable working clothes.                  |   |
| Use suitable eye protection.                    |   |
| Use suitable chemically resistant               |   |
| gloves.  Exposure estimate and reference to it. | ito course                              |
| Assessment method                               | EASY TRA v4.2, Advanced REACH Tool v1.5 |
| Assessment method                               | Worker - inhalation, long-term - local  |
| Exposure estimate                               | 220 mg/m <sup>3</sup>                   |
| Risk Characterization Ratio (RCR)               | 0.709677                                |
| Assessment method                               | Qualitative assessment                  |
| Accomentinental                                 | Worker - dermal                         |
| Guidance to Downstream Users                    | Worker definial                         |
| For scaling see: http://www.advancedre          | achtool com                             |
| 1 or scanny sec. http://www.advancedie          | domoonoom                               |

| Contributing exposure scenario |  |
|--------------------------------|--|
| Use descriptors covered        | PROC13: Treatment of articles by dipping and pouring. Use domain: professional |
| Operational conditions         |  |
| Concentration of the substance | 2-methylpropan-1-ol<br>Content: >= 0 % - <= 100 %                              |

to Regulation (EC) No 1907/2006.

Date / Revised: 11.09.2023 Version: 5.0
Date previous version: 14.11.2022 Previous version: 4.0

Date / First version: 05.06.2014

Product: **ISOBUTANOL** (ID no. 30034839/SDS\_GEN\_RO/EN)

| Physical state                           | liquid  |  |  |
|--|---|--|--|
| Vapour pressure of the substance         | 1600 Pa                                       |  |  |
| during use                               |   |  |  |
| Process temperature                      | 20 °C   |  |  |
| Duration and Frequency of activity       | 480 min 5 days per week                       |  |  |
| Indoor/Outdoor                           | Indoor  |  |  |
| Risk Management Measures                 |   |  |  |
| Provide a good standard of general       |   |  |  |
| ventilation (not less than 3 - 5 air     | Effectiveness: 30 %                           |  |  |
| changes per hour)                        |   |  |  |
| Ensure minimization of manual            |   |  |  |
| phases Avoid frequent and direct         |   |  |  |
| contact with substance. Supervision in   |   |  |  |
| place to check that the RMMs in place    |   |  |  |
| are being used correctly and OCs         |   |  |  |
| followed. Avoid splashing.               |   |  |  |
| Wear suitable working clothes.           |   |  |  |
| Use suitable eye protection.             |   |  |  |
| Use suitable chemically resistant        |   |  |  |
| gloves.                                  |   |  |  |
| Exposure estimate and reference to it    | Exposure estimate and reference to its source |  |  |
| Assessment method                        | EASY TRA v4.2, ECETOC TRA v3.0, Worker        |  |  |
|  | Worker - inhalation, long-term - local        |  |  |
| Exposure estimate                        | 216,188 mg/m³                                 |  |  |
| Risk Characterization Ratio (RCR)        | 0,697381                                      |  |  |
| Assessment method                        | Qualitative assessment                        |  |  |
|  | Worker - dermal                               |  |  |
| Guidance to Downstream Users             |   |  |  |
| For scaling see: http://www.ecetoc.org/t | ra  |  |  |

| Contributing exposure scenario              |   |
|---|---|
| Use descriptors covered                     | PROC19: Manual activities involving hand contact Use domain: professional |
| Operational conditions                      |   |
| Concentration of the substance              | 2-methylpropan-1-ol<br>Content: >= 0 % - <= 100 %                         |
| Physical state                              | liquid  |
| Vapour pressure of the substance during use | 1600 Pa   |
| Process temperature                         | 20 °C   |
| Duration and Frequency of activity          | 480 min 5 days per week   |
| Indoor/Outdoor                              | Indoor  |

to Regulation (EC) No 1907/2006.

Date / Revised: 11.09.2023 Version: 5.0
Date previous version: 14.11.2022 Previous version: 4.0

Date / First version: 05.06.2014

Product: ISOBUTANOL

(ID no. 30034839/SDS\_GEN\_RO/EN)

Date of print 21.10.2025

| Risk Management Measures                 | Risk Management Measures               |  |
|--|--|--|
| Provide a good standard of general       |  |  |
| ventilation (not less than 3 - 5 air     | Effectiveness: 30 %                    |  |
| changes per hour)                        |  |  |
| Ensure minimization of manual            |  |  |
| phases Avoid frequent and direct         |  |  |
| contact with substance. Supervision in   |  |  |
| place to check that the RMMs in place    |  |  |
| are being used correctly and OCs         |  |  |
| followed. Avoid splashing.               |  |  |
| Wear suitable working clothes.           |  |  |
| Use suitable eye protection.             |  |  |
| Use suitable chemically resistant        |  |  |
| gloves.                                  |  |  |
| Exposure estimate and reference to i     | ts source                              |  |
| Assessment method                        | EASY TRA v4.2, ECETOC TRA v3.0, Worker |  |
|  | Worker - inhalation, long-term - local |  |
| Exposure estimate                        | 216,188 mg/m³                          |  |
| Risk Characterization Ratio (RCR)        | 0,697381                               |  |
| Assessment method                        | Qualitative assessment                 |  |
|  | Worker - dermal                        |  |
| Guidance to Downstream Users             |  |  |
| For scaling see: http://www.ecetoc.org/t | ra                                     |  |

\* \* \* \* \* \* \* \* \* \* \* \* \* \* \* \*

### 15. Short title of exposure scenario

Use in laboratories, (use in industrial settings) ERC4, ERC6a, ERC7; PROC15

## Control of exposure and risk management measures

| Contributing exposure scenario |   |
|--------------------------------|---|
| Use descriptors covered        | ERC4: Use of non-reactive processing aid at industrial site (no inclusion into or onto article) As no environmental hazard was identified no environmental-related exposure assessment and risk characterization was performed. |
| Operational conditions         |   |

| Contributing exposure scenario |  |
|--------------------------------|--|
| Use descriptors covered        | ERC6a: Use of intermediate As no environmental hazard was identified no environmental-related exposure assessment and risk characterization was performed. |

to Regulation (EC) No 1907/2006.

Date / Revised: 11.09.2023 Version: 5.0
Date previous version: 14.11.2022 Previous version: 4.0

Date / First version: 05.06.2014

Product: ISOBUTANOL

(ID no. 30034839/SDS\_GEN\_RO/EN)

Date of print 21.10.2025

## Operational conditions

| Contributing exposure scenario |  |
|--------------------------------|--|
| Use descriptors covered        | ERC7: Use of functional fluid at industrial site As no environmental hazard was identified no environmental-related exposure assessment and risk characterization was performed. |
| Operational conditions         |  |

| Contributing exposure scenario                |  |  |
|---|--|--|
| -   | PROC15: Use a laboratory reagent.      |  |
| Use descriptors covered                       | Use domain: industrial                 |  |
|   |  |  |
| Operational conditions                        |  |  |
|   | 2-methylpropan-1-ol                    |  |
| Concentration of the substance                | Content: >= 0 % - <= 100 %             |  |
| Physical state                                | liquid                                 |  |
| Vapour pressure of the substance              | 1600 Pa                                |  |
| during use                                    | 10001 a                                |  |
| <u> </u>                                      | 20 °C                                  |  |
| Process temperature                           |  |  |
| D 0 15 ( 00)                                  | 480 min 5 days per week                |  |
| Duration and Frequency of activity            |  |  |
| Indoor/Outdoor                                | Indoor                                 |  |
| Risk Management Measures                      |  |  |
| Ensure minimization of manual                 |  |  |
| phases Avoid frequent and direct              |  |  |
| contact with substance. Supervision in        |  |  |
| place to check that the RMMs in place         |  |  |
| are being used correctly and OCs              |  |  |
| followed. Avoid splashing.                    |  |  |
| Wear suitable working clothes.                |  |  |
| Use suitable eye protection.                  |  |  |
| Use suitable chemically resistant             |  |  |
| gloves.                                       |  |  |
| Exposure estimate and reference to its source |  |  |
| Assessment method                             | EASY TRA v4.2, ECETOC TRA v3.0, Worker |  |
|   | Worker - inhalation, long-term - local |  |
| Exposure estimate                             | 30,884 mg/m³                           |  |
| Risk Characterization Ratio (RCR)             | 0,099626                               |  |
| Assessment method                             | Qualitative assessment                 |  |
|   | Worker - dermal                        |  |
| Guidance to Downstream Users                  |  |  |
| For scaling see: http://www.ecetoc.org/t      | ra                                     |  |

to Regulation (EC) No 1907/2006.

Date / Revised: 11.09.2023 Version: 5.0
Date previous version: 14.11.2022 Previous version: 4.0

Date / First version: 05.06.2014

Product: ISOBUTANOL

(ID no. 30034839/SDS\_GEN\_RO/EN)

Date of print 21.10.2025

# 16. Short title of exposure scenario

Use in laboratories, (use in professional settings)

ERC8a; PROC15

# Control of exposure and risk management measures

| Contributing exposure scenario |  |
|--------------------------------|--|
| Use descriptors covered        | ERC8a: Widespread use of non-reactive processing aid (no inclusion into or onto article, indoor) As no environmental hazard was identified no environmental-related exposure assessment and risk characterization was performed. |
| Operational conditions         |  |

| Contributing exposure scenario              |  |
|---|--|
| <u> </u>                                    | PROC15: Use a laboratory reagent.      |
| Use descriptors covered                     | Use domain: professional               |
| Operational conditions                      |  |
|   | 2-methylpropan-1-ol                    |
| Concentration of the substance              | Content: >= 0 % - <= 100 %             |
| Physical state                              | liquid                                 |
| Vapour pressure of the substance during use | 1600 Pa                                |
| Process temperature                         | 20 °C                                  |
| Duration and Frequency of activity          | 480 min 5 days per week                |
| Indoor/Outdoor                              | Indoor                                 |
| Risk Management Measures                    |  |
| Ensure minimization of manual               |  |
| phases Avoid frequent and direct            |  |
| contact with substance. Supervision in      |  |
| place to check that the RMMs in place       |  |
| are being used correctly and OCs            |  |
| followed. Avoid splashing.                  |  |
| Wear suitable working clothes.              |  |
| Use suitable eye protection.                |  |
| Use suitable chemically resistant           |  |
| gloves.                                     |  |
| Exposure estimate and reference to          |  |
| Assessment method                           | EASY TRA v4.2, ECETOC TRA v3.0, Worker |
|   | Worker - inhalation, long-term - local |
| Exposure estimate                           | 30,884 mg/m <sup>3</sup>               |

to Regulation (EC) No 1907/2006.

Date / Revised: 11.09.2023 Version: 5.0
Date previous version: 14.11.2022 Previous version: 4.0

Date / First version: 05.06.2014

Product: **ISOBUTANOL** 

(ID no. 30034839/SDS\_GEN\_RO/EN)

Date of print 21.10.2025

| Risk Characterization Ratio (RCR)          | 0,099626               |
|--|------------------------|
| Assessment method                          | Qualitative assessment |
|  | Worker - dermal        |
| Guidance to Downstream Users               |                        |
| For scaling see: http://www.ecetoc.org/tra |                        |

\* \* \* \* \* \* \* \* \* \* \* \* \* \* \* \*

# 17. Short title of exposure scenario

Use in Lubricants, (consumer use) ERC8a, ERC8d, ERC9a, ERC9b; PC1, PC24, PC31, PC35

## **Control of exposure and risk management measures**

| Contributing exposure scenario |  |
|--------------------------------|--|
| Use descriptors covered        | ERC8a: Widespread use of non-reactive processing aid (no inclusion into or onto article, indoor) As no environmental hazard was identified no environmental-related exposure assessment and risk characterization was performed. |
| Operational conditions         |  |

| Contributing exposure scenario |   |
|--------------------------------|---|
| Use descriptors covered        | ERC8d: Widespread use of non-reactive processing aid (no inclusion into or onto article, outdoor) As no environmental hazard was identified no environmental-related exposure assessment and risk characterization was performed. |
| Operational conditions         | <u> </u>  |

| Contributing exposure scenario |  |
|--------------------------------|--|
| Use descriptors covered        | ERC9a: Widespread use of functional fluid (indoor) As no environmental hazard was identified no environmental-related exposure assessment and risk characterization was performed. |
| Operational conditions         |  |

| Contributing exposure scenario |   |
|--------------------------------|---|
| Use descriptors covered        | ERC9b: Widespread use of functional fluid (outdoor) As no environmental hazard was identified no environmental-related exposure assessment and risk characterization was performed. |
| Operational conditions         | •   |

to Regulation (EC) No 1907/2006.

Date / Revised: 11.09.2023 Version: 5.0
Date previous version: 14.11.2022 Previous version: 4.0
Date / First version: 05.06.2014

Product: ISOBUTANOL

(ID no. 30034839/SDS\_GEN\_RO/EN)

| Contributing exposure scenario                |   |
|---|---|
| Use descriptors covered                       | PC1_1: Subcategory: Glues, hobby use                |
| Operational conditions                        |   |
| Concentration of the substance                | 2-methylpropan-1-ol<br>Content: >= 0 % - <= 30 %    |
| Vapour pressure of the substance during use   | 1600 Pa   |
| Process temperature                           | 20 °C   |
| Duration and Frequency of activity            | Exposure duration: 4 h 365 uses per year            |
| Room size                                     | 20 m3   |
| Ventilation rate per hour                     | 0,6   |
| Exposed skin area                             | Fingertips (36 cm2)                                 |
| Uptake fraction dermal                        | 100 %   |
|   | Amount per use 9 g Relevant for inhalative exposure |
|   | estimates   |
| Exposure estimate and reference to its source |   |
| Assessment method                             | EASY TRA v4.2, ECETOC TRA, Consumer                 |
|   | Consumer - inhalation, long-term - systemic         |
| Exposure estimate                             | 39,7059 mg/m³                                       |
| Risk Characterization Ratio (RCR)             | 0,721925  |
| Guidance to Downstream Users                  |   |
| For scaling see: http://www.ecetoc.org/       | tra   |

| Contributing exposure scenario              |   |
|---|---|
| Use descriptors covered                     | PC1_2: Subcategory: Glues DIY-use (carpet glue, tile glue, wood parquet glue) |
| Operational conditions                      |   |
| Concentration of the substance              | 2-methylpropan-1-ol<br>Content: >= 0 % - <= 2 %                               |
| Vapour pressure of the substance during use | 1600 Pa   |
| Process temperature                         | 20 °C   |
| Duration and Frequency of activity          | Exposure duration: 75 min Relevant for inhalative exposure estimates          |
| Duration and Frequency of activity          | Application duration: 75 min Relevant for inhalative exposure estimates       |
| Duration and Frequency of activity          | < 1 uses per year   |
| Room size                                   | 58 m3   |

to Regulation (EC) No 1907/2006.

Date / Revised: 11.09.2023 Version: 5.0
Date previous version: 14.11.2022 Previous version: 4.0

Date / First version: 05.06.2014 Product: **ISOBUTANOL** 

(ID no. 30034839/SDS\_GEN\_RO/EN)

| Ventilation rate per hour  | 2,5   |  |
|--|---|--|
| Temperature (Application)  | 20 °C   |  |
| body weight  | 65 kg   |  |
| Release area   | 40000 cm <sup>2</sup>                           |  |
|  | Release area is constant                        |  |
| Release duration   | 75 min  |  |
|  | Relevant for inhalative exposure estimates      |  |
| Exposure estimate and reference to its source                                      |   |  |
| Assessment method  | EASY TRA v4.2, ConsExpo v4.1, Inhalation model: |  |
| Assessment method  | exposure to vapour - evaporation                |  |
|  | Consumer - inhalation, long-term - systemic     |  |
| Exposure estimate  | 49,4508 mg/m³                                   |  |
| Risk Characterization Ratio (RCR)  | 0,899106  |  |
|  | The exposure calculation is based on the mean   |  |
|  | concentration on the day of exposure.           |  |
| Guidance to Downstream Users   |   |  |
| For scaling see: http://www.rivm.nl/en/healthanddisease/productsafety/ConsExpo.jsp |   |  |

| Contributing exposure scenario                |  |
|---|--|
| Use descriptors covered                       | PC1_3: Subcategory: Glue from spray  |
| Operational conditions                        |  |
| Concentration of the substance                | 2-methylpropan-1-ol<br>Content: >= 0 % - <= 6 %                                  |
| Vapour pressure of the substance during use   | 1600 Pa  |
| Process temperature                           | 20 °C  |
| Duration and Frequency of activity            | Exposure duration: 240 min Relevant for inhalative exposure estimates            |
| Duration and Frequency of activity            | Application duration: 3 min Relevant for inhalative exposure estimates           |
| Duration and Frequency of activity            | 12 uses per year   |
| Room size                                     | 20 m3  |
| Ventilation rate per hour                     | 0,6  |
| Temperature (Application)                     | 20 °C  |
| body weight                                   | 65 kg  |
| Release area                                  | 20000 cm <sup>2</sup>  |
|   | Release area is constant   |
| Release duration                              | 3 min  |
|   | Relevant for inhalative exposure estimates                                       |
| Exposure estimate and reference to its source |  |
| Assessment method                             | EASY TRA v4.2, ConsExpo v4.1, Inhalation model: exposure to vapour - evaporation |

Page: 100/131

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to Regulation (EC) No 1907/2006.

Date / Revised: 11.09.2023 Version: 5.0
Date previous version: 14.11.2022 Previous version: 4.0

Date / First version: 05.06.2014 Product: **ISOBUTANOL** 

(ID no. 30034839/SDS\_GEN\_RO/EN)

|  | Consumer - inhalation, long-term - systemic   |
|--|---|
| Exposure estimate  | 38,644 mg/m³                                  |
| Risk Characterization Ratio (RCR)  | 0,702618                                      |
|  | The exposure calculation is based on the mean |
|  | concentration on the day of exposure.         |
| Guidance to Downstream Users   |   |
| For scaling see: http://www.rivm.nl/en/healthanddisease/productsafety/ConsExpo.jsp |   |

| Contributing exposure scenario   |  |
|--|--|
| Use descriptors covered  | PC1_4: Subcategory: Sealant  |
| Operational conditions   |  |
| Concentration of the substance   | 2-methylpropan-1-ol<br>Content: >= 0 % - <= 12 %                                 |
| Vapour pressure of the substance during use  | 1600 Pa  |
| Process temperature  | 20 °C  |
| Duration and Frequency of activity   | Exposure duration: 45 min Relevant for inhalative exposure estimates             |
| Duration and Frequency of activity   | Application duration: 30 min Relevant for inhalative exposure estimates          |
| Duration and Frequency of activity   | 3 uses per year  |
| Room size  | 10 m3  |
| Ventilation rate per hour  | 2  |
| Temperature (Application)  | 20 °C  |
| body weight  | 65 kg  |
| Release area   | 250 cm <sup>2</sup>  |
|  | Release area increases over time   |
| Release duration   | 30 min   |
|  | Relevant for inhalative exposure estimates                                       |
| Exposure estimate and reference to   |  |
| Assessment method  | EASY TRA v4.2, ConsExpo v4.1, Inhalation model: exposure to vapour - evaporation |
|  | Consumer - inhalation, long-term - systemic                                      |
| Exposure estimate  | 11,549 mg/m³   |
| Risk Characterization Ratio (RCR)  | 0,209982   |
|  | The exposure calculation is based on the mean                                    |
| Guidance to Downstream Users   | concentration on the day of exposure.  |
| For scaling see: http://www.rivm.nl/en/healthanddisease/productsafety/ConsExpo.jsp |  |
| roi scaling see. http://www.nvm.ni/en/l  | nealmanduisease/productsarety/Conscxpo.jsp                                       |

| Contributing exposure scenario |  |
|--------------------------------|--|
| Use descriptors covered        | PC24: Lubricants, Greases and Release Products           |
|                                | Exposure of the consumer can be ruled out. Use in closed |

Page: 101/131

BASF safety data sheet. This is a translation of the country-specific safety data sheet into a language other than that required by law. This document does not replace the safety data sheet provided according

to Regulation (EC) No 1907/2006.

Date / Revised: 11.09.2023 Version: 5.0
Date previous version: 14.11.2022 Previous version: 4.0
Date / First version: 05.06.2014

Product: ISOBUTANOL

(ID no. 30034839/SDS\_GEN\_RO/EN)

|   | system is assumed |
|---|-------------------|
| Operational conditions                      |                   |
| Vapour pressure of the substance during use | 1600 Pa           |
| Process temperature                         | 20 °C             |

| Contributing exposure scenario              |   |  |
|---|---|--|
| Use descriptors covered                     | PC23_1, PC31_1: Subcategory: Polishes, wax / cream (floor, furniture, shoes)        |  |
| Operational conditions                      |   |  |
| Concentration of the substance              | 2-methylpropan-1-ol<br>Content: >= 0 % - <= 20 %                                    |  |
| Vapour pressure of the substance during use | 1600 Pa   |  |
| Process temperature                         | 20 °C   |  |
| Duration and Frequency of activity          | Exposure duration: 240 min Relevant for inhalative exposure estimates               |  |
| Duration and Frequency of activity          | Application duration: 90 min Relevant for inhalative exposure estimates             |  |
| Duration and Frequency of activity          | 1 uses per year   |  |
| Room size                                   | 58 m3   |  |
| Ventilation rate per hour                   | 2,5   |  |
| Temperature (Application)                   | 20 °C   |  |
| body weight                                 | 65 kg   |  |
| Release area                                | 220000 cm <sup>2</sup>  |  |
|   | Release area increases over time  |  |
| Release duration                            | 90 min  |  |
|   | Relevant for inhalative exposure estimates  |  |
| Exposure estimate and reference to          |   |  |
| Assessment method                           | EASY TRA v4.2, ConsExpo v4.1, Inhalation model: exposure to vapour - evaporation    |  |
|   | Consumer - inhalation, long-term - systemic   |  |
| Exposure estimate                           | 31,5875 mg/m³   |  |
| Risk Characterization Ratio (RCR)           | 0,574318  |  |
|   | The exposure calculation is based on the mean concentration on the day of exposure. |  |
| Guidance to Downstream Users                |   |  |
| For scaling see: http://www.rivm.nl/en/h    | nealthanddisease/productsafety/ConsExpo.jsp   |  |

| Contributing exposure scenario |  |
|--------------------------------|--|
| Use descriptors covered        | PC23_2, PC31_2: Subcategory: Polishes, spray (furniture, |

to Regulation (EC) No 1907/2006.

Date / Revised: 11.09.2023 Version: 5.0
Date previous version: 14.11.2022 Previous version: 4.0

Date / First version: 05.06.2014 Product: **ISOBUTANOL** 

(ID no. 30034839/SDS\_GEN\_RO/EN)

| Concentration of the substance  Concentration of the substance  Vapour pressure of the substance during use  Process temperature  Duration and Frequency of activity  Application duration: 90 min Relevant for inhalative exposure estimates  1 uses per year  1 uses per year  1 uses per year  20 °C  Application duration: 90 min Relevant for inhalative exposure estimates  1 uses per year  20 °C  65 kg  Remark of the substance  1 uses posure estimates  20 °C  58 m3  Ventilation rate per hour 2,5  Temperature (Application) 20 °C  body weight  65 kg  Release area  220000 cm² Release area increases over time  Release duration 90 min Relevant for inhalative exposure estimates  Exposure estimate and reference to its source  Assessment method  EASY TRA v4.2, ConsExpo v4.1, Inhalation model: exposure to vapour - evaporation Consumer - inhalation, long-term - systemic  Exposure estimate  31,5875 mg/m³ Risk Characterization Ratio (RCR) 0,574318  The exposure calculation is based on the mean concentration on the day of exposure.  Guidance to Downstream Users  For scaling see: http://www.rivm.nl/en/healthanddisease/productsafety/ConsExpo,jsp   |  | shoes)  |
|--|--|---|
| Concentration of the substance       2-methylpropan-1-ol Content: >= 0 % - <= 20 %   | Operational conditions                   | 1   |
| Concentration of the substance  Vapour pressure of the substance during use  Process temperature  Duration and Frequency of activity  Power size  Sama  Ventilation rate per hour  Temperature (Application)  Doy weight  Release area  220000 cm²  Release area  220000 cm²  Release duration  Relevant for inhalative exposure estimates  Power size  Sama  Ventilation rate per hour  Power size  Sama  Ventilation rate per hour  Essama  Power size  Exposure estimate  Release area  220000 cm²  Release area increases over time  Relevant for inhalative exposure estimates  Exposure estimate and reference to its source  EASY TRA v4.2, ConsExpo v4.1, Inhalation model: exposure to vapour - evaporation  Consumer - inhalation, long-term - systemic  Exposure estimate  Risk Characterization Ratio (RCR)  O,574318  The exposure calculation is based on the mean concentration on the day of exposure.  Guidance to Downstream Users   | •  | 2-methylpropan-1-ol                             |
| during use  Process temperature  Duration and Frequency of activity  Room size  Ventilation rate per hour  Temperature (Application)  Dody weight  Release area  220000 cm²  Release area  220000 cm²  Release area increases over time  Release duration  Relevant for inhalative exposure estimates  Exposure estimate and reference to its source  Assessment method  EASY TRA v4.2, ConsExpo v4.1, Inhalation model: exposure estimate  Exposure estimate  Consumer - inhalation, long-term - systemic  Exposure estimate  31,5875 mg/m³  Risk Characterization Ratio (RCR)  Guidance to Downstream Users  | Concentration of the substance           |   |
| Duration and Frequency of activity  Pouration and Frequency of activity  Room size  Sama  Ventilation rate per hour  Temperature (Application)  Duration and Frequency of activity  Pouration and Frequency of activity  Room size  Sama  Ventilation rate per hour  2,5  Temperature (Application)  20 °C  body weight  Release area  220000 cm²  Release area increases over time  Release duration  Relevant for inhalative exposure estimates  Exposure estimate and reference to its source  Assessment method  EASY TRA v4.2, ConsExpo v4.1, Inhalation model: exposure to vapour - evaporation  Consumer - inhalation, long-term - systemic  Exposure estimate  31,5875 mg/m³  Risk Characterization Ratio (RCR)  O,574318  The exposure calculation is based on the mean concentration on the day of exposure.  Guidance to Downstream Users   |  | 1600 Pa   |
| Duration and Frequency of activity  Relevant for inhalative exposure estimates  1 uses per year  1 uses per year  1 uses per year  8 m3  Ventilation rate per hour 2,5  Temperature (Application) 20 °C  body weight  Release area 220000 cm²  Release area increases over time  Release duration 90 min  Relevant for inhalative exposure estimates  Exposure estimate and reference to its source  Assessment method EASY TRA v4.2, ConsExpo v4.1, Inhalation model: exposure to vapour - evaporation  Consumer - inhalation, long-term - systemic  Exposure estimate 31,5875 mg/m³ Risk Characterization Ratio (RCR) The exposure calculation is based on the mean concentration on the day of exposure.  Guidance to Downstream Users  | Process temperature                      | 20 °C   |
| Duration and Frequency of activity  Duration and Frequency of activity  Room size  Felevant for inhalative exposure estimates  1 uses per year  1 uses per year  Felevant for inhalative exposure estimates  1 uses per year  Felevant for inhalative exposure estimates  1 uses per year  Felevant for inhalative exposure estimates  Fexposure estimate and reference to its source  Felevant for inhalative exposure estimates  Fexposure estimate and reference to its source  Felevant for inhalative exposure estimates  Fexposure estimate and reference to its source  Felevant for inhalative exposure estimates  Fexposure estimate and reference to its source  Felevant for inhalative exposure estimates  Fexposure estimate and reference to its source  Felevant for inhalative exposure estimates  Fexposure estimate and reference to its source  Felevant for inhalative exposure estimates  Fexposure estimate and reference to its source  Felevant for inhalative exposure estimates  Fexposure estimate and reference to its source  Felevant for inhalative exposure estimates  Fexposure estimate and reference to its source  Fexposure to vapour - evaporation  Consumer - inhalation, long-term - systemic  The exposure calculation is based on the mean concentration on the day of exposure.  Felevant for inhalative exposure estimates | Duration and Frequency of activity       | Exposure duration: 240 min                      |
| Duration and Frequency of activity  Relevant for inhalative exposure estimates  1 uses per year  1 uses per year  1 uses per year  58 m3  Ventilation rate per hour 2,5  Temperature (Application) 20 °C  65 kg  Release area 220000 cm² Release area increases over time  Release duration 90 min Relevant for inhalative exposure estimates  Exposure estimate and reference to its source  EASY TRA v4.2, ConsExpo v4.1, Inhalation model: exposure to vapour - evaporation  Consumer - inhalation, long-term - systemic  Exposure estimate 31,5875 mg/m³ Risk Characterization Ratio (RCR) 7 the exposure calculation is based on the mean concentration on the day of exposure.   | Duration and Frequency of activity       |   |
| Duration and Frequency of activity  Room size  Ventilation rate per hour  Temperature (Application)  body weight  Release area  Release area  Release area increases over time  Release duration  Relevant for inhalative exposure estimates  Exposure estimate and reference to its source  Assessment method  EASY TRA v4.2, ConsExpo v4.1, Inhalation model: exposure to vapour - evaporation  Consumer - inhalation, long-term - systemic  Exposure estimate  31,5875 mg/m³  Risk Characterization Ratio (RCR)  Guidance to Downstream Users   | Duration and Frequency of activity       |   |
| Room size 58 m3  Ventilation rate per hour 2,5  Temperature (Application) 20 °C  body weight 65 kg  Release area 220000 cm²  Release area increases over time  Release duration 90 min  Relevant for inhalative exposure estimates  Exposure estimate and reference to its source  Assessment method EASY TRA v4.2, ConsExpo v4.1, Inhalation model: exposure to vapour - evaporation  Consumer - inhalation, long-term - systemic  Exposure estimate 31,5875 mg/m³  Risk Characterization Ratio (RCR) 0,574318  The exposure calculation is based on the mean concentration on the day of exposure.   | Duration and Frequency of activity       | ·   |
| Ventilation rate per hour  Temperature (Application)  20 °C  65 kg  Release area  220000 cm²  Release area increases over time  Release duration  Relevant for inhalative exposure estimates  Exposure estimate and reference to its source  Assessment method  EASY TRA v4.2, ConsExpo v4.1, Inhalation model: exposure to vapour - evaporation  Consumer - inhalation, long-term - systemic  Exposure estimate  31,5875 mg/m³  Risk Characterization Ratio (RCR)  The exposure calculation is based on the mean concentration on the day of exposure.  Guidance to Downstream Users  | Duration and Frequency of activity       | 1 uses per year                                 |
| Temperature (Application)  20 °C  65 kg  Release area  220000 cm²  Release area increases over time  Release duration  90 min  Relevant for inhalative exposure estimates  Exposure estimate and reference to its source  Assessment method  EASY TRA v4.2, ConsExpo v4.1, Inhalation model: exposure to vapour - evaporation  Consumer - inhalation, long-term - systemic  Exposure estimate  31,5875 mg/m³  Risk Characterization Ratio (RCR)  0,574318  The exposure calculation is based on the mean concentration on the day of exposure.  Guidance to Downstream Users   | Room size                                | 58 m3   |
| Body weight  Release area  220000 cm² Release area increases over time  Release duration 90 min Relevant for inhalative exposure estimates  Exposure estimate and reference to its source  Assessment method EASY TRA v4.2, ConsExpo v4.1, Inhalation model: exposure to vapour - evaporation Consumer - inhalation, long-term - systemic  Exposure estimate 31,5875 mg/m³ Risk Characterization Ratio (RCR) 0,574318 The exposure calculation is based on the mean concentration on the day of exposure.  Guidance to Downstream Users  | Ventilation rate per hour                | 2,5   |
| Release area  Release area increases over time Release duration  Relevant for inhalative exposure estimates  Exposure estimate and reference to its source  Assessment method  EASY TRA v4.2, ConsExpo v4.1, Inhalation model: exposure to vapour - evaporation  Consumer - inhalation, long-term - systemic  Exposure estimate  31,5875 mg/m³  Risk Characterization Ratio (RCR)  O,574318  The exposure calculation is based on the mean concentration on the day of exposure.  Guidance to Downstream Users   | Temperature (Application)                | 20 °C   |
| Release area increases over time  Release duration  90 min  Relevant for inhalative exposure estimates  Exposure estimate and reference to its source  Assessment method  EASY TRA v4.2, ConsExpo v4.1, Inhalation model: exposure to vapour - evaporation  Consumer - inhalation, long-term - systemic  Exposure estimate  31,5875 mg/m³  Risk Characterization Ratio (RCR)  0,574318  The exposure calculation is based on the mean concentration on the day of exposure.  Guidance to Downstream Users  | body weight                              | 65 kg   |
| Release duration  Relevant for inhalative exposure estimates  Exposure estimate and reference to its source  Assessment method  EASY TRA v4.2, ConsExpo v4.1, Inhalation model: exposure to vapour - evaporation  Consumer - inhalation, long-term - systemic  Exposure estimate  31,5875 mg/m³  Risk Characterization Ratio (RCR)  0,574318  The exposure calculation is based on the mean concentration on the day of exposure.  Guidance to Downstream Users  | Release area                             | 220000 cm <sup>2</sup>                          |
| Relevant for inhalative exposure estimates  Exposure estimate and reference to its source  Assessment method  EASY TRA v4.2, ConsExpo v4.1, Inhalation model: exposure to vapour - evaporation  Consumer - inhalation, long-term - systemic  Exposure estimate  31,5875 mg/m³  Risk Characterization Ratio (RCR)  0,574318  The exposure calculation is based on the mean concentration on the day of exposure.  Guidance to Downstream Users  |  | Release area increases over time                |
| Assessment method  EASY TRA v4.2, ConsExpo v4.1, Inhalation model: exposure to vapour - evaporation  Consumer - inhalation, long-term - systemic  Exposure estimate  31,5875 mg/m³  Risk Characterization Ratio (RCR)  0,574318  The exposure calculation is based on the mean concentration on the day of exposure.  Guidance to Downstream Users   | Release duration                         | 90 min  |
| Assessment method  EASY TRA v4.2, ConsExpo v4.1, Inhalation model: exposure to vapour - evaporation  Consumer - inhalation, long-term - systemic  Exposure estimate  31,5875 mg/m³  Risk Characterization Ratio (RCR)  0,574318  The exposure calculation is based on the mean concentration on the day of exposure.  Guidance to Downstream Users   |  | Relevant for inhalative exposure estimates      |
| exposure to vapour - evaporation  Consumer - inhalation, long-term - systemic  Exposure estimate  31,5875 mg/m³  Risk Characterization Ratio (RCR)  0,574318  The exposure calculation is based on the mean concentration on the day of exposure.  Guidance to Downstream Users  | Exposure estimate and reference to       |   |
| exposure to vapour - evaporation  Consumer - inhalation, long-term - systemic  31,5875 mg/m³  Risk Characterization Ratio (RCR)  0,574318  The exposure calculation is based on the mean concentration on the day of exposure.  Guidance to Downstream Users   | A concern and models and                 | EASY TRA v4.2, ConsExpo v4.1, Inhalation model: |
| Consumer - inhalation, long-term - systemic  Exposure estimate 31,5875 mg/m³  Risk Characterization Ratio (RCR) 0,574318  The exposure calculation is based on the mean concentration on the day of exposure.  Guidance to Downstream Users  | Assessment method                        | exposure to vapour - evaporation                |
| Risk Characterization Ratio (RCR)  0,574318  The exposure calculation is based on the mean concentration on the day of exposure.  Guidance to Downstream Users   |  |   |
| The exposure calculation is based on the mean concentration on the day of exposure.  Guidance to Downstream Users  | Exposure estimate                        | 31,5875 mg/m³                                   |
| concentration on the day of exposure.  Guidance to Downstream Users  | Risk Characterization Ratio (RCR)        | 0,574318  |
| Guidance to Downstream Users   | , , ,                                    | The exposure calculation is based on the mean   |
|  |  | concentration on the day of exposure.           |
| For scaling see: http://www.rivm.nl/en/healthanddisease/productsafety/ConsExpo.isp   |  |   |
|  | For scaling see: http://www.rivm.nl/en/h | nealthanddisease/productsafety/ConsExpo.jsp     |

| Contributing exposure scenario              |   |
|---|---|
| Use descriptors covered                     | PC8_1, PC35_1: Subcategory: Laundry and dish washing products |
| Operational conditions                      |   |
| Concentration of the substance              | 2-methylpropan-1-ol<br>Content: >= 0 % - <= 5 %               |
| Vapour pressure of the substance during use | 1600 Pa   |
| Process temperature                         | 20 °C   |

to Regulation (EC) No 1907/2006.

Date / Revised: 11.09.2023 Version: 5.0
Date previous version: 14.11.2022 Previous version: 4.0

Date / First version: 05.06.2014

Product: ISOBUTANOL

(ID no. 30034839/SDS\_GEN\_RO/EN)

| Duration and Frequency of activity      | Exposure duration: 1 h 365 uses per year             |
|---|--|
| Room size                               | 20 m3  |
| Ventilation rate per hour               | 0,6  |
| Exposed skin area                       | Both hands (820 cm <sup>2</sup> )                    |
| Uptake fraction dermal                  | 100 %  |
|   | Amount per use 15 g Relevant for inhalative exposure |
|   | estimates  |
| Exposure estimate and reference to      | its source   |
| Assessment method                       | EASY TRA v4.2, ECETOC TRA, Consumer                  |
|   | Consumer - inhalation, long-term - systemic          |
| Exposure estimate                       | 23,4375 mg/m³  |
| Risk Characterization Ratio (RCR)       | 0,426136   |
| Guidance to Downstream Users            |  |
| For scaling see: http://www.ecetoc.org/ | tra  |

| Contributing exposure scenario              |  |  |
|---|--|--|
| Use descriptors covered                     | PC8_2, PC35_2: Subcategory: Cleaners, liquids (all purpose cleaners, sanitary products, floor cleaners, glass cleaners, carpet cleaners, metal cleaners) |  |
| Operational conditions                      |  |  |
| Concentration of the substance              | 2-methylpropan-1-ol<br>Content: >= 0 % - <= 50 %   |  |
| Vapour pressure of the substance during use | 1600 Pa  |  |
| Process temperature                         | 20 °C  |  |
| Duration and Frequency of activity          | Exposure duration: 0,75 min Relevant for inhalative exposure estimates   |  |
| Duration and Frequency of activity          | Application duration: 0,3 min Relevant for inhalative exposure estimates   |  |
| Duration and Frequency of activity          | 104 uses per year  |  |
| Room size                                   | 1 m3   |  |
| Ventilation rate per hour                   | 0,5  |  |
| Temperature (Application)                   | 20 °C  |  |
| body weight                                 | 65 kg  |  |
| Release area                                | 20 cm <sup>2</sup>   |  |
|   | Release area is constant   |  |
| Release duration                            | 0,3 min  |  |
|   | Relevant for inhalative exposure estimates   |  |
| Exposure estimate and reference to          | Exposure estimate and reference to its source  |  |
| Assessment method                           | EASY TRA v4.2, ConsExpo v4.1, Inhalation model: exposure to vapour - evaporation   |  |

to Regulation (EC) No 1907/2006.

Date / Revised: 11.09.2023 Version: 5.0
Date previous version: 14.11.2022 Previous version: 4.0

Date / First version: 05.06.2014

Product: ISOBUTANOL

(ID no. 30034839/SDS\_GEN\_RO/EN)

Date of print 21.10.2025

|  | Consumer - inhalation, long-term - systemic   |
|--|---|
| Exposure estimate  | 4,5898 mg/m³                                  |
| Risk Characterization Ratio (RCR)  | 0,083451                                      |
|  | The exposure calculation is based on the mean |
|  | concentration on the day of exposure.         |
| Guidance to Downstream Users   |   |
| For scaling see: http://www.rivm.nl/en/healthanddisease/productsafety/ConsExpo.jsp |   |

| Contributing exposure scenario              |  |
|---|--|
| Use descriptors covered                     | PC8_2, PC35_2: Subcategory: Cleaners, liquids (all purpose cleaners, sanitary products, floor cleaners, glass cleaners, carpet cleaners, metal cleaners) |
| Operational conditions                      |  |
| Concentration of the substance              | 2-methylpropan-1-ol<br>Content: >= 0 % - <= 4 %  |
| Vapour pressure of the substance during use | 1600 Pa  |
| Process temperature                         | 20 °C  |
| Duration and Frequency of activity          | Exposure duration: 240 min Relevant for inhalative exposure estimates  |
| Duration and Frequency of activity          | Application duration: 30 min Relevant for inhalative exposure estimates  |
| Duration and Frequency of activity          | 104 uses per year  |
| Room size                                   | 58 m3  |
| Ventilation rate per hour                   | 0,5  |
| Temperature (Application)                   | 20 °C  |
| body weight                                 | 65 kg  |
| Release area                                | 220000 cm <sup>2</sup>   |
|   | Release area increases over time   |
| Release duration                            | 30 min   |
|   | Relevant for inhalative exposure estimates   |
| Exposure estimate and reference to          |  |
| Assessment method                           | EASY TRA v4.2, ConsExpo v4.1, Inhalation model: exposure to vapour - evaporation   |
|   | Consumer - inhalation, long-term - systemic  |
| Exposure estimate                           | 42,7271 mg/m³  |
| Risk Characterization Ratio (RCR)           | 0,776856   |
|   | The exposure calculation is based on the mean concentration on the day of exposure.  |
| Guidance to Downstream Users                |  |
| For scaling see: http://www.rivm.nl/en/h    | nealthanddisease/productsafety/ConsExpo.jsp  |

## Contributing exposure scenario

Page: 105/131

BASF safety data sheet. This is a translation of the country-specific safety data sheet into a language other than that required by law. This document does not replace the safety data sheet provided according

to Regulation (EC) No 1907/2006.

Date / Revised: 11.09.2023 Version: 5.0 Date previous version: 14.11.2022 Previous version: 4.0

Date / First version: 05.06.2014 Product: **ISOBUTANOL** 

(ID no. 30034839/SDS\_GEN\_RO/EN)

Date of print 21.10.2025

| Use descriptors covered                     | PC8_3, PC35_3: Subcategory: Cleaners, trigger sprays (all purpose cleaners, sanitary products, glass cleaners) |
|---|--|
| Operational conditions                      |  |
| Concentration of the substance              | 2-methylpropan-1-ol<br>Content: >= 0 % - <= 20 %   |
| Vapour pressure of the substance during use | 1600 Pa  |
| Process temperature                         | 20 °C  |
| Duration and Frequency of activity          | Exposure duration: 25 min Relevant for inhalative exposure estimates   |
| Duration and Frequency of activity          | Application duration: 20 min Relevant for inhalative exposure estimates  |
| Duration and Frequency of activity          | 52 uses per year   |
| Room size                                   | 10 m3  |
| Ventilation rate per hour                   | 2  |
| Temperature (Application)                   | 20 °C  |
| body weight                                 | 65 kg  |
| Release area                                | 64000 cm <sup>2</sup>  |
|   | Release area is constant   |
| Release duration                            | 20 min   |
|   | Relevant for inhalative exposure estimates   |
| Exposure estimate and reference to          |  |
| Assessment method                           | EASY TRA v4.2, ConsExpo v4.1, Inhalation model: exposure to vapour - evaporation                               |
|   | Consumer - inhalation, long-term - systemic  |
| Exposure estimate                           | 7,0627 mg/m³   |
| Risk Characterization Ratio (RCR)           | 0,128413   |
|   | The exposure calculation is based on the mean concentration on the day of exposure.                            |
| Guidance to Downstream Users                |  |
| For scaling see: http://www.rivm.nl/en/     | healthanddisease/productsafety/ConsExpo.jsp  |

\* \* \* \* \* \* \* \* \* \* \* \* \* \* \* \* \* \* \*

# 18. Short title of exposure scenario

Use in Lubricants, (use in industrial settings) ERC4, ERC7; PROC7, PROC10, PROC13, PROC17, PROC18

# Control of exposure and risk management measures

| Contributing exposure scenario |   |
|--------------------------------|---|
| Use descriptors covered        | ERC4: Use of non-reactive processing aid at industrial site |

to Regulation (EC) No 1907/2006.

Date / Revised: 11.09.2023 Version: 5.0
Date previous version: 14.11.2022 Previous version: 4.0

Date / First version: 05.06.2014 Product: **ISOBUTANOL** 

(ID no. 30034839/SDS\_GEN\_RO/EN)

|                        | (no inclusion into or onto article) As no environmental hazard was identified no environmental-related exposure assessment and risk characterization was performed. |
|------------------------|---|
| Operational conditions |   |

| Contributing exposure scenario |  |
|--------------------------------|--|
| Use descriptors covered        | ERC7: Use of functional fluid at industrial site As no environmental hazard was identified no environmental-related exposure assessment and risk characterization was performed. |
| Operational conditions         |  |

| Contributing exposure scenario              |                            |
|---|----------------------------|
|   | PROC7: Industrial spraying |
| Use descriptors covered                     | Use domain: industrial     |
| Operational conditions                      |                            |
|   | 2-methylpropan-1-ol        |
| Concentration of the substance              | Content: >= 0 % - <= 100 % |
| Physical state                              | liquid                     |
| Vapour pressure of the substance during use | 1600 Pa                    |
| Process temperature                         | 20 °C                      |
| Duration and Frequency of activity          | 480 min 5 days per week    |
| Indoor/Outdoor                              | Indoor                     |
| Risk Management Measures                    |                            |
| Ensure minimization of manual               |                            |
| phases Supervision in place to check        |                            |
| that the RMMs in place are being            |                            |
| used correctly and OCs followed.            |                            |
| Ensure that the task is being carried       |                            |
| out outside the breathing zone of a         |                            |
| worker (distance head-product greater       |                            |
| than 1m). Regular inspection and            |                            |
| maintenance of equipment and                |                            |
| machines.                                   |                            |
| Ensure that a spraying booth is used.       |                            |
| Use suitable eye protection.                |                            |
| Avoid frequent and direct contact with      |                            |
| substance.                                  |                            |
| Use suitable chemically resistant           |                            |
| gloves.                                     |                            |

to Regulation (EC) No 1907/2006.

Date / Revised: 11.09.2023 Version: 5.0
Date previous version: 14.11.2022 Previous version: 4.0

Date / First version: 05.06.2014 Product: **ISOBUTANOL** 

(ID no. 30034839/SDS\_GEN\_RO/EN)

Date of print 21.10.2025

| Exposure estimate and reference to its source               |  |
|---|--|
| Assessment method   | EASY TRA v4.2, Stoffenmanager 8        |
|   | Worker - inhalation, long-term - local |
| Exposure estimate   | 0,0001 mg/m <sup>3</sup>               |
| Risk Characterization Ratio (RCR)                           | 0,000001                               |
| Assessment method   | Qualitative assessment                 |
| Worker - dermal   |  |
| Guidance to Downstream Users                                |  |
| For scaling see: https://www.stoffenmanager.nl/default.aspx |  |

| Contributing exposure scenario           |  |
|--|--|
| Contributing expectate contains          | PROC10: Roller application or brushing |
| Use descriptors covered                  | Use domain: industrial                 |
| <b>,</b>                                 |  |
| Operational conditions                   |  |
|  | 2-methylpropan-1-ol                    |
| Concentration of the substance           | Content: >= 0 % - <= 100 %             |
|  | n                                      |
| Physical state                           | liquid                                 |
| Vapour pressure of the substance         | 1600 Pa                                |
| during use                               | 00.00                                  |
| Process temperature                      | 20 °C                                  |
|  | 480 min 5 days per week                |
| Duration and Frequency of activity       | - 400 mm o dayo por wook               |
| Indoor/Outdoor                           | Indoor                                 |
| Risk Management Measures                 |  |
| Ensure minimization of manual            |  |
| phases Avoid frequent and direct         |  |
| contact with substance. Supervision in   |  |
| place to check that the RMMs in place    |  |
| are being used correctly and OCs         |  |
| followed. Avoid splashing.               |  |
| Wear suitable working clothes.           |  |
| Use suitable eye protection.             |  |
| Use suitable chemically resistant        |  |
| gloves.                                  |  |
| Exposure estimate and reference to       | its source                             |
| Assessment method                        | EASY TRA v4.2, ECETOC TRA v3.0, Worker |
|  | Worker - inhalation, long-term - local |
| Exposure estimate                        | 154,42 mg/m³                           |
| Risk Characterization Ratio (RCR)        | 0,498129                               |
| Assessment method                        | Qualitative assessment                 |
|  | Worker - dermal                        |
| Guidance to Downstream Users             |  |
| For scaling see: http://www.ecetoc.org/t | ra                                     |

# Contributing exposure scenario

to Regulation (EC) No 1907/2006.

Date / Revised: 11.09.2023 Version: 5.0
Date previous version: 14.11.2022 Previous version: 4.0

Date / First version: 05.06.2014 Product: **ISOBUTANOL** 

(ID no. 30034839/SDS\_GEN\_RO/EN)

| Use descriptors covered   | PROC13: Treatment of articles by dipping and pouring. Use domain: industrial |
|---|--|
| Operational conditions  |  |
| Concentration of the substance  | 2-methylpropan-1-ol<br>Content: >= 0 % - <= 100 %                            |
| Physical state  | liquid   |
| Vapour pressure of the substance during use   | 1600 Pa  |
| Process temperature   | 20 °C  |
| Duration and Frequency of activity  | 480 min 5 days per week  |
| Indoor/Outdoor  | Indoor   |
| Risk Management Measures  |  |
| Ensure minimization of manual phases Avoid frequent and direct contact with substance. Supervision in place to check that the RMMs in place |  |
| are being used correctly and OCs followed. Avoid splashing.   |  |
| Wear suitable working clothes.  |  |
| Use suitable eye protection.  |  |
| Use suitable chemically resistant gloves.   |  |
| Exposure estimate and reference to  | its source   |
| Assessment method   | EASY TRA v4.2, ECETOC TRA v3.0, Worker                                       |
|   | Worker - inhalation, long-term - local                                       |
| Exposure estimate   | 154,42 mg/m³   |
| Risk Characterization Ratio (RCR)   | 0,498129   |
| Assessment method   | Qualitative assessment   |
|   | Worker - dermal  |
| Guidance to Downstream Users  |  |
| For scaling see: http://www.ecetoc.org/t  | ra   |

| Contributing exposure scenario              |  |
|---|--|
| Use descriptors covered                     | PROC17: Lubrication at high energy conditions in metal working operations Use domain: industrial |
| Operational conditions                      |  |
| Concentration of the substance              | 2-methylpropan-1-ol<br>Content: >= 0 % - <= 100 %  |
| Physical state                              | liquid   |
| Vapour pressure of the substance during use | 1600 Pa  |

to Regulation (EC) No 1907/2006.

Date / Revised: 11.09.2023 Version: 5.0
Date previous version: 14.11.2022 Previous version: 4.0

Date / First version: 05.06.2014 Product: **ISOBUTANOL** 

(ID no. 30034839/SDS\_GEN\_RO/EN)

| Process temperature  | 20 °C                                  |
|--|--|
| Duration and Frequency of activity                             | 480 min 5 days per week                |
| Indoor/Outdoor   | Indoor                                 |
| Risk Management Measures                                       |  |
| Ensure minimization of manual phases Avoid frequent and direct |  |
| contact with substance. Supervision in                         |  |
| place to check that the RMMs in place                          |  |
| are being used correctly and OCs                               |  |
| followed. Avoid splashing.                                     |  |
| Wear suitable working clothes.                                 |  |
| Use suitable eye protection.                                   |  |
| Use suitable chemically resistant                              |  |
| gloves.  |  |
| Exposure estimate and reference to its source                  |  |
| Assessment method  | EASY TRA v4.2, ECETOC TRA v3.0, Worker |
|  | Worker - inhalation, long-term - local |
| Exposure estimate  | 154,42 mg/m³                           |
| Risk Characterization Ratio (RCR)                              | 0,498129                               |
| Assessment method  | Qualitative assessment                 |
|  | Worker - dermal                        |
| Guidance to Downstream Users                                   |  |
| For scaling see: http://www.ecetoc.org/t                       | ra                                     |

| Contributing exposure scenario  |  |
|---|--|
| Use descriptors covered   | PROC17: Lubrication at high energy conditions in metal working operations Use domain: industrial |
| Operational conditions  |  |
| Concentration of the substance  | 2-methylpropan-1-ol<br>Content: >= 0 % - <= 100 %  |
| Physical state  | liquid   |
| Vapour pressure of the substance during use   | 10001 Pa   |
| Process temperature   | 108 °C   |
|   | Corresponds to a vapour pressure > 100.0 hPa   |
| Duration and Frequency of activity  | 480 min 5 days per week  |
| Indoor/Outdoor  | Indoor   |
| Risk Management Measures  |  |
| Provide a good standard of general ventilation (not less than 3 - 5 air changes per hour) | Effectiveness: 30 %  |

to Regulation (EC) No 1907/2006.

Date / Revised: 11.09.2023 Version: 5.0
Date previous version: 14.11.2022 Previous version: 4.0
Date / First version: 05.06.2014

Product: ISOBUTANOL

(ID no. 30034839/SDS\_GEN\_RO/EN)

| Ensure minimization of manual phases Avoid frequent and direct contact with substance. Supervision in place to check that the RMMs in place are being used correctly and OCs followed. Avoid splashing.  Wear suitable working clothes.  Use suitable eye protection.  Use suitable chemically resistant |  |  |
|--|--|--|
| gloves.  |  |  |
| Exposure estimate and reference to its source  |  |  |
| Assessment method  | EASY TRA v4.2, ECETOC TRA v3.0, Worker |  |
|  | Worker - inhalation, long-term - local |  |
| Exposure estimate  | 216,188 mg/m <sup>3</sup>              |  |
| Risk Characterization Ratio (RCR)  | 0,697381                               |  |
| Assessment method  | Qualitative assessment                 |  |
|  | Worker - dermal                        |  |
| Guidance to Downstream Users   |  |  |
| For scaling see: http://www.ecetoc.org/  | tra                                    |  |

| Contributing exposure scenario  |  |  |  |
|---|--|--|--|
| Use descriptors covered   | PROC18: General greasing /lubrication at high kinetic energy conditions Use domain: industrial |  |  |
| Operational conditions  |  |  |  |
| Concentration of the substance  | 2-methylpropan-1-ol<br>Content: >= 0 % - <= 100 %  |  |  |
| Physical state  | liquid   |  |  |
| Vapour pressure of the substance during use   | 1600 Pa  |  |  |
| Process temperature   | 20 °C  |  |  |
| Duration and Frequency of activity  | 480 min 5 days per week  |  |  |
| Indoor/Outdoor  | Indoor   |  |  |
| Risk Management Measures  | Risk Management Measures   |  |  |
| Ensure minimization of manual phases Avoid frequent and direct contact with substance. Supervision in place to check that the RMMs in place are being used correctly and OCs followed. Avoid splashing.  Wear suitable working clothes. |  |  |  |
| Use suitable eye protection.  |  |  |  |
| Use suitable chemically resistant gloves.   |  |  |  |

to Regulation (EC) No 1907/2006.

Date / Revised: 11.09.2023 Version: 5.0
Date previous version: 14.11.2022 Previous version: 4.0

Date / First version: 05.06.2014 Product: **ISOBUTANOL** 

(ID no. 30034839/SDS\_GEN\_RO/EN)

| Exposure estimate and reference to its source |  |
|---|--|
| Assessment method                             | EASY TRA v4.2, ECETOC TRA v3.0, Worker |
|   | Worker - inhalation, long-term - local |
| Exposure estimate                             | 154,42 mg/m³                           |
| Risk Characterization Ratio (RCR)             | 0,498129                               |
| Assessment method                             | Qualitative assessment                 |
|   | Worker - dermal                        |
| Guidance to Downstream Users                  |  |
| For scaling see: http://www.ecetoc.org        | /tra                                   |

| Contributing exposure scenario  |  |  |
|---|--|--|
| Use descriptors covered   | PROC18: General greasing /lubrication at high kinetic energy conditions Use domain: industrial |  |
| Operational conditions  |  |  |
| Concentration of the substance  | 2-methylpropan-1-ol<br>Content: >= 0 % - <= 100 %  |  |
| Physical state  | liquid   |  |
| Vapour pressure of the substance during use   | 10001 Pa   |  |
| Process temperature   | 108 °C   |  |
|   | Corresponds to a vapour pressure > 100.0 hPa   |  |
| Duration and Frequency of activity  | 480 min 5 days per week  |  |
| Indoor/Outdoor  | Indoor   |  |
| Risk Management Measures  |  |  |
| Provide a good standard of general ventilation (not less than 3 - 5 air changes per hour)   | Effectiveness: 30 %  |  |
| Ensure minimization of manual phases Avoid frequent and direct contact with substance. Supervision in place to check that the RMMs in place are being used correctly and OCs followed. Avoid splashing. |  |  |
| Wear suitable working clothes.  |  |  |
| Use suitable eye protection.  |  |  |
| Use suitable chemically resistant   |  |  |
| gloves.   |  |  |
| Exposure estimate and reference to i  |  |  |
| Assessment method   | EASY TRA v4.2, ECETOC TRA v3.0, Worker   |  |
|   | Worker - inhalation, long-term - local   |  |
| Exposure estimate   | 216,188 mg/m³  |  |
| Risk Characterization Ratio (RCR)   | 0,697381   |  |
| Assessment method   | Qualitative assessment   |  |

Page: 112/131

BASF safety data sheet. This is a translation of the country-specific safety data sheet into a language other than that required by law. This document does not replace the safety data sheet provided according

to Regulation (EC) No 1907/2006.

Date / Revised: 11.09.2023 Version: 5.0
Date previous version: 14.11.2022 Previous version: 4.0

Date / First version: 05.06.2014

Product: ISOBUTANOL

(ID no. 30034839/SDS\_GEN\_RO/EN)

Date of print 21.10.2025

| Worker - dermal                            |  |
|--|--|
| Guidance to Downstream Users               |  |
| For scaling see: http://www.ecetoc.org/tra |  |

\* \* \* \* \* \* \* \* \* \* \* \* \* \* \* \*

### 19. Short title of exposure scenario

Use in Lubricants, (use in professional settings) ERC8a, ERC8d, ERC9a, ERC9b; PROC10, PROC11, PROC13, PROC17, PROC18, PROC20

#### Control of exposure and risk management measures

| Contributing exposure scenario |  |
|--------------------------------|--|
| Use descriptors covered        | ERC8a: Widespread use of non-reactive processing aid (no inclusion into or onto article, indoor) As no environmental hazard was identified no environmental-related exposure assessment and risk characterization was performed. |
| Operational conditions         |  |

| Contributing exposure scenario |   |
|--------------------------------|---|
| Use descriptors covered        | ERC8d: Widespread use of non-reactive processing aid (no inclusion into or onto article, outdoor) As no environmental hazard was identified no environmental-related exposure assessment and risk characterization was performed. |
| Operational conditions         | <u> </u>  |

| Contributing exposure scenario |  |
|--------------------------------|--|
| Use descriptors covered        | ERC9a: Widespread use of functional fluid (indoor) As no environmental hazard was identified no environmental-related exposure assessment and risk characterization was performed. |
| Operational conditions         |  |

| Contributing exposure scenario |   |
|--------------------------------|---|
| Use descriptors covered        | ERC9b: Widespread use of functional fluid (outdoor) As no environmental hazard was identified no environmental-related exposure assessment and risk characterization was performed. |
| Operational conditions         |   |

### Contributing exposure scenario

to Regulation (EC) No 1907/2006.

Date / Revised: 11.09.2023 Version: 5.0
Date previous version: 14.11.2022 Previous version: 4.0

Date / First version: 05.06.2014 Product: **ISOBUTANOL** 

(ID no. 30034839/SDS\_GEN\_RO/EN)

| Use descriptors covered   | PROC10: Roller application or brushing Use domain: professional                |
|---|--|
| Operational conditions  |  |
| Concentration of the substance  | 2-methylpropan-1-ol<br>Content: >= 0 % - <= 100 %                              |
| Physical state  | liquid   |
| Vapour pressure of the substance during use   | 1600 Pa  |
| Process temperature   | 20 °C  |
| Duration and Frequency of activity  | 480 min 5 days per week  |
| Indoor/Outdoor  | Indoor   |
| Risk Management Measures  |  |
| Provide a good standard of general ventilation (not less than 3 - 5 air changes per hour)   | Effectiveness: 30 %  |
| Ensure minimization of manual phases Avoid frequent and direct contact with substance. Supervision in place to check that the RMMs in place are being used correctly and OCs followed. Avoid splashing. |  |
| Wear suitable working clothes.  |  |
| Use suitable eye protection.  |  |
| Use suitable chemically resistant   |  |
| gloves.   | 4  |
| Exposure estimate and reference to i  |  |
| Assessment method   | EASY TRA v4.2, ECETOC TRA v3.0, Worker  Worker - inhalation, long-term - local |
| Exposure estimate   | 216,188 mg/m <sup>3</sup>  |
| Risk Characterization Ratio (RCR)   | 0,697381   |
| Assessment method   | Qualitative assessment   |
| , issuesom moniou   | Worker - dermal  |
| Guidance to Downstream Users  |  |
| For scaling see: http://www.ecetoc.org/ti   | ra   |

| Contributing exposure scenario |  |  |
|--------------------------------|--|--|
| Use descriptors covered        | PROC11: Non industrial spraying Use domain: professional |  |
| Operational conditions         |  |  |
| Concentration of the substance | 2-methylpropan-1-ol<br>Content: >= 0 % - <= 100 %        |  |
| Physical state                 | liquid   |  |

to Regulation (EC) No 1907/2006.

Date / Revised: 11.09.2023 Version: 5.0
Date previous version: 14.11.2022 Previous version: 4.0

Date / First version: 05.06.2014 Product: **ISOBUTANOL** 

(ID no. 30034839/SDS\_GEN\_RO/EN)

| Vapour pressure of the substance during use                 | 1600 Pa                                |  |
|---|--|--|
| Process temperature   | 20 °C                                  |  |
| Duration and Frequency of activity                          | 480 min 5 days per week                |  |
| Indoor/Outdoor  | Indoor                                 |  |
| Risk Management Measures                                    |  |  |
| Ensure minimization of manual                               |  |  |
| phases Supervision in place to check                        |  |  |
| that the RMMs in place are being                            |  |  |
| used correctly and OCs followed.                            |  |  |
| Clean equipment and the work area                           |  |  |
| every day. Regular inspection and                           |  |  |
| maintenance of equipment and                                |  |  |
| machines.   |  |  |
| Ensure that a spraying booth is used.                       |  |  |
| Use suitable eye protection.                                |  |  |
| Avoid frequent and direct contact with                      |  |  |
| substance.  |  |  |
| Use suitable chemically resistant                           |  |  |
| gloves.   |  |  |
| Exposure estimate and reference to its source               |  |  |
| Assessment method   | EASY TRA v4.2, Stoffenmanager 8        |  |
|   | Worker - inhalation, long-term - local |  |
| Exposure estimate   | 0,0001 mg/m³                           |  |
| Risk Characterization Ratio (RCR)                           | 0,000001                               |  |
| Assessment method   | Qualitative assessment                 |  |
|   | Worker - dermal                        |  |
| Guidance to Downstream Users                                |  |  |
| For scaling see: https://www.stoffenmanager.nl/default.aspx |  |  |

| Contributing exposure scenario              |  |
|---|--|
| Use descriptors covered                     | PROC11: Non industrial spraying Use domain: professional |
| Operational conditions                      |  |
| Concentration of the substance              | 2-methylpropan-1-ol<br>Content: >= 0 % - <= 10 %         |
| Physical state                              | liquid   |
| Vapour pressure of the substance during use | 1600 Pa  |
| Process temperature                         | 20 °C  |
| Duration and Frequency of activity          | 480 min 5 days per week                                  |
| Indoor/Outdoor                              | Indoor   |

to Regulation (EC) No 1907/2006.

Date / Revised: 11.09.2023 Version: 5.0
Date previous version: 14.11.2022 Previous version: 4.0

Date / First version: 05.06.2014 Product: **ISOBUTANOL** 

(ID no. 30034839/SDS\_GEN\_RO/EN)

|   | Large workrooms only                    |
|---|---|
| Application rate                        | < 3 l/min                               |
| Risk Management Measures                |   |
| Ensure that the task is not carried out |   |
| overhead.                               |   |
| Use equipment with a fixed capturing    |   |
| hood exhaust ventilation.               |   |
| Ensure that general housekeeping is     |   |
| in place                                |   |
| Ensure minimization of manual           |   |
| phases Avoid frequent and direct        |   |
| contact with substance. Supervision in  |   |
| place to check that the RMMs in place   |   |
| are being used correctly and OCs        |   |
| followed. Avoid splashing.              |   |
| Wear suitable working clothes.          |   |
| Use suitable eye protection.            |   |
| Use suitable chemically resistant       |   |
| gloves.                                 |   |
| Exposure estimate and reference to i    |   |
| Assessment method                       | EASY TRA v4.2, Advanced REACH Tool v1.5 |
|   | Worker - inhalation, long-term - local  |
| Exposure estimate                       | 220 mg/m³                               |
| Risk Characterization Ratio (RCR)       | 0,709677                                |
| Assessment method                       | Qualitative assessment                  |
|   | Worker - dermal                         |
| Guidance to Downstream Users            |   |
| For scaling see: http://www.advancedre  | achtool.com                             |

| Contributing exposure scenario  |  |
|---|--|
| Use descriptors covered   | PROC13: Treatment of articles by dipping and pouring. Use domain: professional |
| Operational conditions  |  |
| Concentration of the substance  | 2-methylpropan-1-ol<br>Content: >= 0 % - <= 100 %                              |
| Physical state  | liquid   |
| Vapour pressure of the substance during use                             | 1600 Pa  |
| Process temperature   | 20 °C  |
| Duration and Frequency of activity                                      | 480 min 5 days per week  |
| Indoor/Outdoor  | Indoor   |
| Risk Management Measures  |  |
| Provide a good standard of general ventilation (not less than 3 - 5 air | Effectiveness: 30 %  |

to Regulation (EC) No 1907/2006.

Date / Revised: 11.09.2023 Version: 5.0
Date previous version: 14.11.2022 Previous version: 4.0
Date / First version: 05.06.2014

Product: ISOBUTANOL

(ID no. 30034839/SDS\_GEN\_RO/EN)

| changes per hour)                        |  |
|--|--|
| Ensure minimization of manual            |  |
| phases Avoid frequent and direct         |  |
| contact with substance. Supervision in   |  |
| place to check that the RMMs in place    |  |
| are being used correctly and OCs         |  |
| followed. Avoid splashing.               |  |
| Wear suitable working clothes.           |  |
| Use suitable eye protection.             |  |
| Use suitable chemically resistant        |  |
| gloves.                                  |  |
| Exposure estimate and reference to it    | ts source                              |
| Assessment method                        | EASY TRA v4.2, ECETOC TRA v3.0, Worker |
|  | Worker - inhalation, long-term - local |
| Exposure estimate                        | 216,188 mg/m³                          |
| Risk Characterization Ratio (RCR)        | 0,697381                               |
| Assessment method                        | Qualitative assessment                 |
|  | Worker - dermal                        |
| Guidance to Downstream Users             |  |
| For scaling see: http://www.ecetoc.org/t | ra                                     |

| Contributing exposure scenario  |  |  |
|---|--|--|
| Use descriptors covered   | PROC17: Lubrication at high energy conditions in metal working operations Use domain: professional |  |
| Operational conditions  | l  |  |
| Concentration of the substance  | 2-methylpropan-1-ol<br>Content: >= 0 % - <= 100 %  |  |
| Physical state  | liquid   |  |
| Vapour pressure of the substance during use   | 1600 Pa  |  |
| Process temperature   | 20 °C  |  |
| Duration and Frequency of activity  | 480 min 5 days per week  |  |
| Indoor/Outdoor  | Indoor   |  |
| Risk Management Measures  |  |  |
| Provide a good standard of general or controlled ventilation (5 to 10 air changes per hour)   | Effectiveness: 70 %  |  |
| Ensure minimization of manual phases Avoid frequent and direct contact with substance. Supervision in place to check that the RMMs in place are being used correctly and OCs followed. Avoid splashing. |  |  |

to Regulation (EC) No 1907/2006.

Date / Revised: 11.09.2023 Version: 5.0
Date previous version: 14.11.2022 Previous version: 4.0

Date / First version: 05.06.2014 Product: **ISOBUTANOL** 

(ID no. 30034839/SDS\_GEN\_RO/EN)

| Wear suitable working clothes.                |  |  |
|---|--|--|
| Use suitable eye protection.                  |  |  |
| Use suitable chemically resistant             |  |  |
| gloves.                                       |  |  |
| Exposure estimate and reference to its source |  |  |
| Assessment method                             | EASY TRA v4.2, ECETOC TRA v3.0, Worker |  |
|   | Worker - inhalation, long-term - local |  |
| Exposure estimate                             | 185,304 mg/m³                          |  |
| Risk Characterization Ratio (RCR)             | 0,597755                               |  |
| Assessment method                             | Qualitative assessment                 |  |
|   | Worker - dermal                        |  |
| Guidance to Downstream Users                  |  |  |
| For scaling see: http://www.ecetoc.org/tra    |  |  |

| Contributing exposure scenario   |  |
|--|--|
| Use descriptors covered  | PROC17: Lubrication at high energy conditions in metal working operations Use domain: professional |
| Operational conditions   |  |
| Concentration of the substance   | 2-methylpropan-1-ol<br>Content: >= 0 % - <= 100 %  |
| Physical state   | liquid   |
| Vapour pressure of the substance during use  | 10001 Pa   |
| Process temperature  | 108 °C   |
|  | Corresponds to a vapour pressure > 100.0 hPa   |
| Duration and Frequency of activity   | 480 min 5 days per week  |
| Indoor/Outdoor   | Indoor   |
| Risk Management Measures   |  |
| Local exhaust ventilation  | Effectiveness: 80 %  |
| Provide a good standard of general ventilation (not less than 3 - 5 air changes per hour)  | Effectiveness: 30 %  |
| Ensure minimization of manual phases Avoid frequent and direct contact with substance. Supervision in place to check that the RMMs in place are being used correctly and OCs |  |
| followed. Avoid splashing.   |  |
| Wear suitable working clothes.   |  |
| Use suitable eye protection.   |  |
| Use suitable chemically resistant gloves.  |  |
| Exposure estimate and reference to it  | ts source  |

to Regulation (EC) No 1907/2006.

Date / Revised: 11.09.2023 Version: 5.0
Date previous version: 14.11.2022 Previous version: 4.0

Date / First version: 05.06.2014

Product: **ISOBUTANOL** (ID no. 30034839/SDS\_GEN\_RO/EN)

| Assessment method                          | EASY TRA v4.2, ECETOC TRA v3.0, Worker |
|--|--|
|  | Worker - inhalation, long-term - local |
| Exposure estimate                          | 216,188 mg/m³                          |
| Risk Characterization Ratio (RCR)          | 0,697381                               |
| Assessment method                          | Qualitative assessment                 |
|  | Worker - dermal                        |
| Guidance to Downstream Users               |  |
| For scaling see: http://www.ecetoc.org/tra |  |

| Contributing exposure scenario         |   |
|--|---|
| Use descriptors covered                | PROC18: General greasing /lubrication at high kinetic |
|  | energy conditions                                     |
|  | Use domain: professional                              |
| Operational conditions                 | I   |
|  | 2-methylpropan-1-ol                                   |
| Concentration of the substance         | Content: >= 0 % - <= 100 %                            |
| Physical state                         | liquid  |
| Vapour pressure of the substance       | 1600 Pa   |
| during use                             |   |
| Process temperature                    | 20 °C   |
| Duration and Frequency of activity     | 480 min 5 days per week                               |
| Indoor/Outdoor                         | Indoor  |
| Risk Management Measures               |   |
| Provide a good standard of general or  |   |
| controlled ventilation (5 to 10 air    | Effectiveness: 70 %                                   |
| changes per hour)                      |   |
| Ensure minimization of manual          |   |
| phases Avoid frequent and direct       |   |
| contact with substance. Supervision in |   |
| place to check that the RMMs in place  |   |
| are being used correctly and OCs       |   |
| followed. Avoid splashing.             |   |
| Wear suitable working clothes.         |   |
| Use suitable eye protection.           |   |
| Use suitable chemically resistant      |   |
| gloves.                                |   |
| Exposure estimate and reference to i   |   |
| Assessment method                      | EASY TRA v4.2, ECETOC TRA v3.0, Worker                |
|  | Worker - inhalation, long-term - local                |
| Exposure estimate                      | 185,304 mg/m³   |
| Risk Characterization Ratio (RCR)      | 0,597755  |
| Assessment method                      | Qualitative assessment                                |
|  | Worker - dermal                                       |
| Guidance to Downstream Users           |   |

Page: 119/131

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to Regulation (EC) No 1907/2006.

Date / Revised: 11.09.2023 Version: 5.0
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Product: **ISOBUTANOL** (ID no. 30034839/SDS\_GEN\_RO/EN)

Date of print 21.10.2025

For scaling see: http://www.ecetoc.org/tra

| Contributing exposure scenario                         |   |  |
|--|---|--|
| <u> </u>   | PROC18: General greasing /lubrication at high kinetic energy conditions |  |
| Use descriptors covered                                | Use domain: professional  |  |
| Operational conditions                                 | I   |  |
|  | 2-methylpropan-1-ol   |  |
| Concentration of the substance                         | Content: >= 0 % - <= 100 %  |  |
| Physical state   | liquid  |  |
| Vapour pressure of the substance during use            | 10001 Pa  |  |
| Process temperature                                    | 108 °C  |  |
|  | Corresponds to a vapour pressure > 100.0 hPa                            |  |
| Duration and Frequency of activity                     | 480 min 5 days per week   |  |
| Indoor/Outdoor   | Indoor  |  |
| Risk Management Measures                               |   |  |
| Local exhaust ventilation                              | Effectiveness: 80 %   |  |
| Provide a good standard of general                     |   |  |
| ventilation (not less than 3 - 5 air changes per hour) | Effectiveness: 30 %   |  |
| Ensure minimization of manual                          |   |  |
| phases Avoid frequent and direct                       |   |  |
| contact with substance. Supervision in                 |   |  |
| place to check that the RMMs in place                  |   |  |
| are being used correctly and OCs                       |   |  |
| followed. Avoid splashing.                             |   |  |
| Wear suitable working clothes.                         |   |  |
| Use suitable eye protection.                           |   |  |
| Use suitable chemically resistant                      |   |  |
| gloves.  |   |  |
| Exposure estimate and reference to                     |   |  |
| Assessment method                                      | EASY TRA v4.2, ECETOC TRA v3.0, Worker                                  |  |
|  | Worker - inhalation, long-term - local                                  |  |
| Exposure estimate                                      | 216,188 mg/m³   |  |
| Risk Characterization Ratio (RCR)                      | 0,697381  |  |
| Assessment method                                      | Qualitative assessment  |  |
|  | Worker - dermal   |  |
| Guidance to Downstream Users                           |   |  |
| For scaling see: http://www.ecetoc.org/tra             |   |  |

| Contributing exposure scenario |  |
|--------------------------------|--|
| Use descriptors covered        | PROC20: Use of functional fluids in small devices Use domain: professional |

Page: 120/131

BASF safety data sheet. This is a translation of the country-specific safety data sheet into a language other than that required by law. This document does not replace the safety data sheet provided according

to Regulation (EC) No 1907/2006.

Date / Revised: 11.09.2023 Version: 5.0 Date previous version: 14.11.2022 Previous version: 4.0

Date / First version: 05.06.2014

Product: ISOBUTANOL

(ID no. 30034839/SDS\_GEN\_RO/EN)

Date of print 21.10.2025

| Operational conditions  |   |  |
|---|---|--|
| Concentration of the substance  | 2-methylpropan-1-ol<br>Content: >= 0 % - <= 100 %                             |  |
| Physical state  | liquid  |  |
| Vapour pressure of the substance during use   | 1600 Pa   |  |
| Process temperature   | 20 °C   |  |
| Duration and Frequency of activity  | 480 min 5 days per week   |  |
| Indoor/Outdoor  | Indoor  |  |
| Risk Management Measures  |   |  |
| Ensure minimization of manual phases Avoid frequent and direct contact with substance. Supervision in place to check that the RMMs in place are being used correctly and OCs followed. Avoid splashing.  Wear suitable working clothes. |   |  |
| Use suitable eye protection.  |   |  |
| Use suitable chemically resistant gloves.   |   |  |
| Exposure estimate and reference to its source   |   |  |
| Assessment method   | EASY TRA v4.2, ECETOC TRA v3.0, Worker Worker - inhalation, long-term - local |  |
| Exposure estimate   | 61,768 mg/m³  |  |
| Risk Characterization Ratio (RCR)   | 0,199252  |  |
| Assessment method   | Qualitative assessment Worker - dermal  |  |
| Guidance to Downstream Users  |   |  |
| For scaling see: http://www.ecetoc.org/t  | tra   |  |

### 20. Short title of exposure scenario

Use in Metal working fluids / rolling oils, (use in industrial settings) ERC4; PROC7, PROC10, PROC13, PROC17

#### Control of exposure and risk management measures

| Contributing exposure scenario |   |
|--------------------------------|---|
| Use descriptors covered        | ERC4: Use of non-reactive processing aid at industrial site (no inclusion into or onto article) As no environmental hazard was identified no environmental-related exposure assessment and risk |

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to Regulation (EC) No 1907/2006.

Date / Revised: 11.09.2023 Version: 5.0 Date previous version: 14.11.2022 Previous version: 4.0

Date / First version: 05.06.2014 Product: **ISOBUTANOL** 

(ID no. 30034839/SDS\_GEN\_RO/EN)

Date of print 21.10.2025

|                        | characterization was performed. |
|------------------------|---------------------------------|
| Operational conditions |                                 |

| Contributing exposure scenario                              |   |  |  |
|---|---|--|--|
|   | PROC7: Industrial spraying                    |  |  |
| Use descriptors covered                                     | Use domain: industrial                        |  |  |
| Operational conditions                                      |   |  |  |
|   | 2-methylpropan-1-ol                           |  |  |
| Concentration of the substance                              | Content: >= 0 % - <= 100 %                    |  |  |
| Physical state  | liquid  |  |  |
| Vapour pressure of the substance during use                 | 1600 Pa                                       |  |  |
| Process temperature   | 20 °C   |  |  |
| Duration and Frequency of activity                          | 480 min 5 days per week                       |  |  |
| Indoor/Outdoor  | Indoor  |  |  |
| Risk Management Measures                                    |   |  |  |
| Ensure minimization of manual                               |   |  |  |
| phases Ensure that the task is being                        |   |  |  |
| carried out outside the breathing zone                      |   |  |  |
| of a worker (distance head-product                          |   |  |  |
| greater than 1m). Supervision in place                      |   |  |  |
| to check that the RMMs in place are                         |   |  |  |
| being used correctly and OCs                                |   |  |  |
| followed. Regular inspection and                            |   |  |  |
| maintenance of equipment and                                |   |  |  |
| machines.   |   |  |  |
| Ensure that a spraying booth is used.                       |   |  |  |
| Use suitable eye protection.                                |   |  |  |
| Avoid frequent and direct contact with                      |   |  |  |
| substance.  |   |  |  |
| Use suitable chemically resistant                           |   |  |  |
| gloves.   |   |  |  |
|   | Exposure estimate and reference to its source |  |  |
| Assessment method   | EASY TRA v4.2, Stoffenmanager 8               |  |  |
|   | Worker - inhalation, long-term - local        |  |  |
| Exposure estimate   | 0,0001 mg/m³                                  |  |  |
| Risk Characterization Ratio (RCR)                           | 0,000001                                      |  |  |
| Assessment method   | Qualitative assessment                        |  |  |
|   | Worker - dermal                               |  |  |
| Guidance to Downstream Users                                |   |  |  |
| For scaling see: https://www.stoffenmanager.nl/default.aspx |   |  |  |

## Contributing exposure scenario

to Regulation (EC) No 1907/2006.

Date / Revised: 11.09.2023 Version: 5.0
Date previous version: 14.11.2022 Previous version: 4.0

Date / First version: 05.06.2014 Product: **ISOBUTANOL** 

(ID no. 30034839/SDS\_GEN\_RO/EN)

| Use descriptors covered   | PROC10: Roller application or brushing Use domain: industrial                 |
|---|---|
| Operational conditions  |   |
| Concentration of the substance  | 2-methylpropan-1-ol<br>Content: >= 0 % - <= 100 %                             |
| Physical state  | liquid  |
| Vapour pressure of the substance during use   | 1600 Pa   |
| Process temperature   | 20 °C   |
| Duration and Frequency of activity  | 480 min 5 days per week   |
| Indoor/Outdoor  | Indoor  |
| Risk Management Measures  |   |
| Ensure minimization of manual phases Avoid frequent and direct contact with substance. Supervision in place to check that the RMMs in place are being used correctly and OCs followed. Avoid splashing. |   |
| Wear suitable working clothes.  |   |
| Use suitable eye protection. Use suitable chemically resistant gloves.  |   |
| Exposure estimate and reference to its source   |   |
| Assessment method   | EASY TRA v4.2, ECETOC TRA v3.0, Worker Worker - inhalation, long-term - local |
| Exposure estimate   | 154,42 mg/m³  |
| Risk Characterization Ratio (RCR)   | 0,498129  |
| Assessment method   | Qualitative assessment  |
|   | Worker - dermal   |
| Guidance to Downstream Users  |   |
| For scaling see: http://www.ecetoc.org/t  | ra  |

| Contributing exposure scenario              |  |
|---|--|
| Use descriptors covered                     | PROC13: Treatment of articles by dipping and pouring. Use domain: industrial |
| Operational conditions                      |  |
| Concentration of the substance              | 2-methylpropan-1-ol<br>Content: >= 0 % - <= 100 %                            |
| Physical state                              | liquid   |
| Vapour pressure of the substance during use | 1600 Pa  |
| Process temperature                         | 20 °C  |

to Regulation (EC) No 1907/2006.

Date / Revised: 11.09.2023 Version: 5.0
Date previous version: 14.11.2022 Previous version: 4.0

Date / First version: 05.06.2014

Product: **ISOBUTANOL** 

(ID no. 30034839/SDS\_GEN\_RO/EN)

| Duration and Frequency of activity            | 480 min 5 days per week                |  |
|---|--|--|
| Indoor/Outdoor                                | Indoor                                 |  |
| Risk Management Measures                      |  |  |
| Ensure minimization of manual                 |  |  |
| phases Avoid frequent and direct              |  |  |
| contact with substance. Supervision in        |  |  |
| place to check that the RMMs in place         |  |  |
| are being used correctly and OCs              |  |  |
| followed. Avoid splashing.                    |  |  |
| Wear suitable working clothes.                |  |  |
| Use suitable eye protection.                  |  |  |
| Use suitable chemically resistant             |  |  |
| gloves.                                       |  |  |
| Exposure estimate and reference to its source |  |  |
| Assessment method                             | EASY TRA v4.2, ECETOC TRA v3.0, Worker |  |
|   | Worker - inhalation, long-term - local |  |
| Exposure estimate                             | 154,42 mg/m³                           |  |
| Risk Characterization Ratio (RCR)             | 0,498129                               |  |
| Assessment method                             | Qualitative assessment                 |  |
|   | Worker - dermal                        |  |
| Guidance to Downstream Users                  |  |  |
| For scaling see: http://www.ecetoc.org/t      | ra                                     |  |

| and a second little and the large test |  |  |
|--|--|--|
| rgy conditions in metal                |  |  |
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| Risk Management Measures               |  |  |
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to Regulation (EC) No 1907/2006.

Date / Revised: 11.09.2023 Version: 5.0
Date previous version: 14.11.2022 Previous version: 4.0
Date / First version: 05.06.2014

Product: ISOBUTANOL

(ID no. 30034839/SDS\_GEN\_RO/EN)

| followed. Avoid splashing.                    |  |  |
|---|--|--|
| Wear suitable working clothes.                |  |  |
| Use suitable eye protection.                  |  |  |
| Use suitable chemically resistant             |  |  |
| gloves.                                       |  |  |
| Exposure estimate and reference to its source |  |  |
| Assessment method                             | EASY TRA v4.2, ECETOC TRA v3.0, Worker |  |
|   | Worker - inhalation, long-term - local |  |
| Exposure estimate                             | 154,42 mg/m³                           |  |
| Risk Characterization Ratio (RCR)             | 0,498129                               |  |
| Assessment method                             | Qualitative assessment                 |  |
|   | Worker - dermal                        |  |
| Guidance to Downstream Users                  |  |  |
| For scaling see: http://www.ecetoc.org/       | 'tra                                   |  |

| Contributing exposure scenario  |  |
|---|--|
| Use descriptors covered   | PROC17: Lubrication at high energy conditions in metal working operations Use domain: industrial |
| Operational conditions  |  |
| Concentration of the substance  | 2-methylpropan-1-ol<br>Content: >= 0 % - <= 100 %  |
| Physical state  | liquid   |
| Vapour pressure of the substance during use   | 10001 Pa   |
| Process temperature   | 108 °C   |
|   | Corresponds to a vapour pressure > 100.0 hPa   |
| Duration and Frequency of activity  | 480 min 5 days per week  |
| Indoor/Outdoor  | Indoor   |
| Risk Management Measures  |  |
| Provide a good standard of general ventilation (not less than 3 - 5 air changes per hour)   | Effectiveness: 30 %  |
| Ensure minimization of manual phases Avoid frequent and direct contact with substance. Supervision in place to check that the RMMs in place |  |
| are being used correctly and OCs followed. Avoid splashing.   |  |
| Wear suitable working clothes.  |  |
| Use suitable eye protection.  |  |
| Use suitable chemically resistant gloves.   |  |
| Exposure estimate and reference to i  | ts source  |

to Regulation (EC) No 1907/2006.

Date / Revised: 11.09.2023 Version: 5.0
Date previous version: 14.11.2022 Previous version: 4.0

Date / First version: 05.06.2014

Product: **ISOBUTANOL** (ID no. 30034839/SDS\_GEN\_RO/EN)

Date of print 21.10.2025

| Assessment method                          | EASY TRA v4.2, ECETOC TRA v3.0, Worker |
|--|--|
|  | Worker - inhalation, long-term - local |
| Exposure estimate                          | 216,188 mg/m <sup>3</sup>              |
| Risk Characterization Ratio (RCR)          | 0,697381                               |
| Assessment method                          | Qualitative assessment                 |
|  | Worker - dermal                        |
| Guidance to Downstream Users               |  |
| For scaling see: http://www.ecetoc.org/tra |  |

\* \* \* \* \* \* \* \* \* \* \* \* \* \* \* \*

#### 21. Short title of exposure scenario

Use in Metal working fluids / rolling oils, (use in professional settings) ERC8a; PROC10, PROC11, PROC13, PROC17

# Control of exposure and risk management measures

| Contributing exposure scenario |  |
|--------------------------------|--|
| Use descriptors covered        | ERC8a: Widespread use of non-reactive processing aid (no inclusion into or onto article, indoor) As no environmental hazard was identified no environmental-related exposure assessment and risk characterization was performed. |
| Operational conditions         | •  |

| Contributing exposure scenario  |   |
|---|---|
| Use descriptors covered   | PROC10: Roller application or brushing Use domain: professional |
| Operational conditions  |   |
| Concentration of the substance  | 2-methylpropan-1-ol<br>Content: >= 0 % - <= 100 %               |
| Physical state  | liquid  |
| Vapour pressure of the substance during use   | 1600 Pa   |
| Process temperature   | 20 °C   |
| Duration and Frequency of activity  | 480 min 5 days per week   |
| Indoor/Outdoor  | Indoor  |
| Risk Management Measures  |   |
| Provide a good standard of general ventilation (not less than 3 - 5 air changes per hour) | Effectiveness: 30 %   |
| Ensure minimization of manual   |   |

to Regulation (EC) No 1907/2006.

Date / Revised: 11.09.2023 Version: 5.0
Date previous version: 14.11.2022 Previous version: 4.0

Date / First version: 05.06.2014

Product: ISOBUTANOL

(ID no. 30034839/SDS\_GEN\_RO/EN)

| phases Avoid frequent and direct contact with substance. Supervision in place to check that the RMMs in place are being used correctly and OCs followed. Avoid splashing.  Wear suitable working clothes.  Use suitable eye protection.  Use suitable chemically resistant gloves. |  |
|--|--|
| Exposure estimate and reference to   | its source                             |
| Assessment method  | EASY TRA v4.2, ECETOC TRA v3.0, Worker |
|  | Worker - inhalation, long-term - local |
| Exposure estimate  | 216,188 mg/m³                          |
| Risk Characterization Ratio (RCR)  | 0,697381                               |
| Assessment method  | Qualitative assessment                 |
|  | Worker - dermal                        |
| Guidance to Downstream Users   |  |
| For scaling see: http://www.ecetoc.org/t   | ra                                     |

| Contributing exposure scenario                                      |                                 |
|---|---------------------------------|
|   | PROC11: Non industrial spraying |
| Use descriptors covered   | Use domain: professional        |
| Operational conditions  | <u>I</u>                        |
|   | 2-methylpropan-1-ol             |
| Concentration of the substance                                      | Content: >= 0 % - <= 100 %      |
| Physical state  | liquid                          |
| Vapour pressure of the substance during use                         | 1600 Pa                         |
| Process temperature   | 20 °C                           |
| Duration and Frequency of activity                                  | 480 min 5 days per week         |
| Indoor/Outdoor  | Indoor                          |
| Risk Management Measures  |                                 |
| Ensure minimization of manual                                       |                                 |
| phases Supervision in place to check                                |                                 |
| that the RMMs in place are being                                    |                                 |
| used correctly and OCs followed.                                    |                                 |
| Clean equipment and the work area                                   |                                 |
| every day. Regular inspection and                                   |                                 |
| maintenance of equipment and machines.                              |                                 |
|   |                                 |
| Ensure that a spraying booth is used.  Use suitable eye protection. |                                 |
| Avoid frequent and direct contact with                              |                                 |
| substance.  |                                 |
| Substance.  |                                 |

to Regulation (EC) No 1907/2006.

Date / Revised: 11.09.2023 Version: 5.0
Date previous version: 14.11.2022 Previous version: 4.0

Date / First version: 05.06.2014 Product: **ISOBUTANOL** 

(ID no. 30034839/SDS\_GEN\_RO/EN)

| Use suitable chemically resistant                           |  |
|---|--|
| gloves.   |  |
| Exposure estimate and reference to                          | its source                             |
| Assessment method   | EASY TRA v4.2, Stoffenmanager 8        |
|   | Worker - inhalation, long-term - local |
| Exposure estimate   | 0,0001 mg/m <sup>3</sup>               |
| Risk Characterization Ratio (RCR)                           | 0,000001                               |
| Assessment method   | Qualitative assessment                 |
|   | Worker - dermal                        |
| Guidance to Downstream Users                                |  |
| For scaling see: https://www.stoffenmanager.nl/default.aspx |  |

| Contributing exposure scenario              | Contributing exposure scenario  |  |
|---|---------------------------------|--|
| <u> </u>                                    | PROC11: Non industrial spraying |  |
| Use descriptors covered                     | Use domain: professional        |  |
| Operational conditions                      |                                 |  |
|   | 2-methylpropan-1-ol             |  |
| Concentration of the substance              | Content: >= 0 % - <= 10 %       |  |
| Physical state                              | liquid                          |  |
| Vapour pressure of the substance during use | 1600 Pa                         |  |
| Process temperature                         | 20 °C                           |  |
| Duration and Frequency of activity          | 480 min 5 days per week         |  |
| Indoor/Outdoor                              | Indoor                          |  |
|   | Large workrooms only            |  |
| Application rate                            | < 3 l/min                       |  |
| Risk Management Measures                    |                                 |  |
| Ensure that the task is not carried out     |                                 |  |
| overhead.                                   |                                 |  |
| Use equipment with a fixed capturing        |                                 |  |
| hood exhaust ventilation.                   |                                 |  |
| Ensure that general housekeeping is         |                                 |  |
| in place                                    |                                 |  |
| Ensure minimization of manual               |                                 |  |
| phases Avoid frequent and direct            |                                 |  |
| contact with substance. Supervision in      |                                 |  |
| place to check that the RMMs in place       |                                 |  |
| are being used correctly and OCs            |                                 |  |
| followed. Avoid splashing.                  |                                 |  |
| Wear suitable working clothes.              |                                 |  |
| Use suitable eye protection.                |                                 |  |
| Use suitable chemically resistant           |                                 |  |
| gloves.                                     |                                 |  |
| Exposure estimate and reference to i        | ts source                       |  |

to Regulation (EC) No 1907/2006.

Date / Revised: 11.09.2023 Version: 5.0
Date previous version: 14.11.2022 Previous version: 4.0

Date / First version: 05.06.2014 Product: **ISOBUTANOL** 

(ID no. 30034839/SDS\_GEN\_RO/EN)

| Assessment method                                 | EASY TRA v4.2, Advanced REACH Tool v1.5 |
|---|---|
|   | Worker - inhalation, long-term - local  |
| Exposure estimate                                 | 220 mg/m <sup>3</sup>                   |
| Risk Characterization Ratio (RCR)                 | 0,709677                                |
| Assessment method                                 | Qualitative assessment                  |
|   | Worker - dermal                         |
| Guidance to Downstream Users                      |   |
| For scaling see: http://www.advancedreachtool.com |   |

| Contributing exposure scenario  |  |
|---|--|
| Use descriptors covered   | PROC13: Treatment of articles by dipping and pouring. Use domain: professional |
| Operational conditions  |  |
| Concentration of the substance  | 2-methylpropan-1-ol<br>Content: >= 0 % - <= 100 %                              |
| Physical state  | liquid   |
| Vapour pressure of the substance during use   | 1600 Pa  |
| Process temperature   | 20 °C  |
| Duration and Frequency of activity  | 480 min 5 days per week  |
| Indoor/Outdoor  | Indoor   |
| Risk Management Measures  |  |
| Provide a good standard of general ventilation (not less than 3 - 5 air changes per hour)   | Effectiveness: 30 %  |
| Ensure minimization of manual phases Avoid frequent and direct contact with substance. Supervision in place to check that the RMMs in place are being used correctly and OCs followed. Avoid splashing. |  |
| Wear suitable working clothes.  |  |
| Use suitable eye protection.  |  |
| Use suitable chemically resistant gloves.   |  |
| Exposure estimate and reference to i  |  |
| Assessment method   | EASY TRA v4.2, ECETOC TRA v3.0, Worker  Worker - inhalation, long-term - local |
| Exposure estimate   | 216,188 mg/m³  |
| Risk Characterization Ratio (RCR)   | 0,697381   |
| Assessment method   | Qualitative assessment Worker - dermal   |
| Guidance to Downstream Users  |  |
| For scaling see: http://www.ecetoc.org/t  | ra   |

to Regulation (EC) No 1907/2006.

Date / Revised: 11.09.2023 Version: 5.0
Date previous version: 14.11.2022 Previous version: 4.0

Date / First version: 05.06.2014

Product: ISOBUTANOL

(ID no. 30034839/SDS\_GEN\_RO/EN)

| Contributing exposure scenario  |  |
|---|--|
| Use descriptors covered   | PROC17: Lubrication at high energy conditions in metal working operations Use domain: professional |
| Operational conditions  |  |
| Concentration of the substance  | 2-methylpropan-1-ol<br>Content: >= 0 % - <= 100 %  |
| Physical state  | liquid   |
| Vapour pressure of the substance during use   | 1600 Pa  |
| Process temperature   | 20 °C  |
| Duration and Frequency of activity  | 480 min 5 days per week  |
| Indoor/Outdoor  | Indoor   |
| Risk Management Measures  |  |
| Provide a good standard of general or controlled ventilation (5 to 10 air changes per hour)   | Effectiveness: 70 %  |
| Ensure minimization of manual phases Avoid frequent and direct contact with substance. Supervision in place to check that the RMMs in place are being used correctly and OCs followed. Avoid splashing. |  |
| Wear suitable working clothes.  |  |
| Use suitable eye protection.  |  |
| Use suitable chemically resistant gloves.   |  |
| Exposure estimate and reference to  |  |
| Assessment method   | EASY TRA v4.2, ECETOC TRA v3.0, Worker  Worker - inhalation, long-term - local                     |
| Exposure estimate   | 185,304 mg/m³  |
| Risk Characterization Ratio (RCR)   | 0,597755   |
| Assessment method   | Qualitative assessment Worker - dermal   |
| Guidance to Downstream Users  |  |
| For scaling see: http://www.ecetoc.org/t  | ra   |

| Contributing exposure scenario |  |
|--------------------------------|--|
| Use descriptors covered        | PROC17: Lubrication at high energy conditions in metal working operations Use domain: professional |
| Operational conditions         |  |

Page: 130/131

BASF safety data sheet. This is a translation of the country-specific safety data sheet into a language other than that required by law. This document does not replace the safety data sheet provided according

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Date of print 21.10.2025

|  | 2-methylpropan-1-ol                          |
|--|--|
| Concentration of the substance           | Content: >= 0 % - <= 100 %                   |
| Physical state                           | liquid                                       |
| Vapour pressure of the substance         | 10001 Pa                                     |
| during use                               |  |
| Process temperature                      | 108 °C                                       |
|  | Corresponds to a vapour pressure > 100.0 hPa |
| Duration and Frequency of activity       | 480 min 5 days per week                      |
| Indoor/Outdoor                           | Indoor                                       |
| Risk Management Measures                 |  |
| Local exhaust ventilation                | Effectiveness: 80 %                          |
| Provide a good standard of general       |  |
| ventilation (not less than 3 - 5 air     | Effectiveness: 30 %                          |
| changes per hour)                        |  |
| Ensure minimization of manual            |  |
| phases Avoid frequent and direct         |  |
| contact with substance. Supervision in   |  |
| place to check that the RMMs in place    |  |
| are being used correctly and OCs         |  |
| followed. Avoid splashing.               |  |
| Wear suitable working clothes.           |  |
| Use suitable eye protection.             |  |
| Use suitable chemically resistant        |  |
| gloves.                                  |  |
| Exposure estimate and reference to i     |  |
| Assessment method                        | EASY TRA v4.2, ECETOC TRA v3.0, Worker       |
|  | Worker - inhalation, long-term - local       |
| Exposure estimate                        | 216,188 mg/m³                                |
| Risk Characterization Ratio (RCR)        | 0,697381                                     |
| Assessment method                        | Qualitative assessment                       |
|  | Worker - dermal                              |
| Guidance to Downstream Users             |  |
| For scaling see: http://www.ecetoc.org/t | ra   |

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# 22. Short title of exposure scenario

Use in Personal care products ERC8a; PC28, PC39

## Control of exposure and risk management measures

| Contributing exposure scenario |  |
|--------------------------------|--|
| Use descriptors covered        | ERC8a: Widespread use of non-reactive processing aid |

to Regulation (EC) No 1907/2006.

Date / Revised: 11.09.2023 Version: 5.0
Date previous version: 14.11.2022 Previous version: 4.0

Date / First version: 05.06.2014 Product: **ISOBUTANOL** 

(ID no. 30034839/SDS\_GEN\_RO/EN)

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|                        | (no inclusion into or onto article, indoor) As no environmental hazard was identified no environmental-related exposure assessment and risk characterization was performed. |
|------------------------|---|
| Operational conditions |   |

| Contributing exposure scenario              |   |
|---|---|
| Use descriptors covered                     | PC28: Perfumes, Fragrances. In accordance to the Article 14 (5b) of the REACh Regulation (EC) No 1907/2006, exposure estimation and risk characterisation needs not to be performed for end uses in cosmetic products within the scope of Directive EC 1223/2009. |
| Operational conditions                      | •   |
| Vapour pressure of the substance during use | 1600 Pa   |
| Process temperature                         | 20 °C   |

| Contributing exposure scenario              |  |  |
|---|--|--|
| Use descriptors covered                     | PC39: Cosmetics, personal care products. In accordance to the Article 14 (5b) of the REACh Regulation (EC) No 1907/2006, exposure estimation and risk characterisation needs not to be performed for end uses in cosmetic products within the scope of Directive EC 1223/2009. |  |
| Operational conditions                      |  |  |
| Vapour pressure of the substance during use | 1600 Pa  |  |
| Process temperature                         | 20 °C  |  |

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