

Creation Date 22-Nov-2010

Revision Date 20-Oct-2023

Revision Number 10

SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1. Product identifier

Product Description: Aqualine™ Titrant 5
Cat No. : AL2200-1, AL2200-212, AL2200-4
Synonyms Karl Fischer Reagent

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

Recommended Use Laboratory chemicals.
Uses advised against No Information available

1.3. Details of the supplier of the safety data sheet

Company

EU entity/business name
Thermo Fisher Scientific
Janssen Pharmaceuticaaan 3a
2440 Geel, Belgium

UK entity/business name
Fisher Scientific UK
Bishop Meadow Road, Loughborough,
Leicestershire LE11 5RG, United Kingdom

Swiss distributor - Fisher Scientific AG
Neuhofstrasse 11, CH 4153 Reinach
Tel: +41 (0) 56 618 41 11
e-mail - infoch@thermofisher.com

E-mail address begel.sdsdesk@thermofisher.com

1.4. Emergency telephone number

Chemtrec US: (800) 424-9300
Chemtrec EU: 001-703-527-3887

For customers in Switzerland:
Tox Info Suisse Emergency Number: **145 (24hr)**
Tox Info Suisse: +41-44 251 51 51 (Emergency number from abroad)
Chemtrec (24h) Toll-Free: 0800 564 402
Chemtrec Local: +41-43 508 20 11 (Zurich)
Tel: 01509 231166

SECTION 2: HAZARDS IDENTIFICATION

2.1. Classification of the substance or mixture

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CLP Classification - Regulation (EC) No 1272/2008

Physical hazards

Flammable liquids

Category 2 (H225)

Health hazards

Acute oral toxicity

Category 3 (H301)

Acute dermal toxicity

Category 3 (H311)

Acute Inhalation Toxicity - Vapors

Category 3 (H331)

Skin Corrosion/Irritation

Category 2 (H315)

Serious Eye Damage/Eye Irritation

Category 2 (H319)

Specific target organ toxicity - (single exposure)

Category 1 (H370)

Specific target organ toxicity - (repeated exposure)

Category 1 (H372)

Environmental hazards

Based on available data, the classification criteria are not met

Full text of Hazard Statements: see section 16

2.2. Label elements



Signal Word

Danger

Hazard Statements

H225 - Highly flammable liquid and vapor

H315 - Causes skin irritation

H319 - Causes serious eye irritation

H370 - Causes damage to organs

H372 - Causes damage to organs through prolonged or repeated exposure

H301 + H311 + H331 - Toxic if swallowed, in contact with skin or if inhaled

Precautionary Statements

P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking

P303 + P361 + P353 - IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower

P301 + P330 + P331 - IF SWALLOWED: rinse mouth. Do NOT induce vomiting

P304 + P340 - IF INHALED: Remove person to fresh air and keep comfortable for breathing

P311 - Call a POISON CENTER or doctor/physician

P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing

P308 + P311 - IF exposed or concerned: Call a POISON CENTER or doctor

P280 - Wear protective gloves/protective clothing/eye protection/face protection

2.3. Other hazards

FSUAL2200

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Toxic to terrestrial vertebrates

This product does not contain any known or suspected endocrine disruptors

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.2. Mixtures

| Component | CAS No | EC No | Weight % | CLP Classification - Regulation (EC) No 1272/2008 |
|-----------|-----------|-----------|----------|--|
| Methanol | 67-56-1 | 200-659-6 | 90 | Flam. Liq. 2 (H225) Acute Tox. 3 (H301) Acute Tox. 3 (H311) Acute Tox. 3 (H331) STOT SE 1 (H370) |
| Iodine | 7553-56-2 | 231-442-4 | 10 | Acute Tox. 4 (H302) Acute Tox. 4 (H312) Acute Tox. 4 (H332) Skin Irrit. 2 (H315) Eye Irrit. 2 (H319) STOT SE 3 (H335) STOT RE 1 (H372) Aquatic Acute 1 (H400) |

| Component | Specific concentration limits (SCL's) | M-Factor | Component notes |
|-----------|---|----------|-----------------|
| Methanol | STOT Single Exp. 1 :: >= 10 STOT Single Exp. 2 :: 3 - < 10 | - | - |
| Iodine | - | 1 | - |

| Components | Reach Registration Number |
|------------|---------------------------|
| Methanol | 01-2119433307-44 |
| Iodine | 01-2119485285-30 |

Full text of Hazard Statements: see section 16

SECTION 4: FIRST AID MEASURES

4.1. Description of first aid measures

| | |
|---|--|
| General Advice | Show this safety data sheet to the doctor in attendance. Immediate medical attention is required. |
| Eye Contact | Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. In the case of contact with eyes, rinse immediately with plenty of water and seek medical advice. |
| Skin Contact | Wash off immediately with plenty of water for at least 15 minutes. Immediate medical attention is required. |
| Ingestion | Do NOT induce vomiting. Call a physician or poison control center immediately. |
| Inhalation | Remove to fresh air. If not breathing, give artificial respiration. Do not use mouth-to-mouth method if victim ingested or inhaled the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. Immediate medical attention is required. |
| Self-Protection of the First Aider | Ensure that medical personnel are aware of the material(s) involved, take precautions to protect themselves and prevent spread of contamination. |

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

Difficulty in breathing. Inhalation of high vapor concentrations may cause symptoms like headache, dizziness, tiredness, nausea and vomiting

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

Notes to Physician

Treat symptomatically. Symptoms may be delayed.

SECTION 5: FIREFIGHTING MEASURES

5.1. Extinguishing media

Suitable Extinguishing Media

CO₂, dry chemical, dry sand, alcohol-resistant foam. Water mist may be used to cool closed containers.

Extinguishing media which must not be used for safety reasons

No information available.

5.2. Special hazards arising from the substance or mixture

Flammable. Risk of ignition. Vapors may form explosive mixtures with air. Vapors may travel to source of ignition and flash back. Containers may explode when heated. Thermal decomposition can lead to release of irritating gases and vapors. Keep product and empty container away from heat and sources of ignition. Vapors may form explosive mixtures with air.

Hazardous Combustion Products

Carbon monoxide (CO), Carbon dioxide (CO₂), Formaldehyde.

5.3. Advice for firefighters

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear. Thermal decomposition can lead to release of irritating gases and vapors.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

Ensure adequate ventilation. Use personal protective equipment as required. Keep people away from and upwind of spill/leak. Evacuate personnel to safe areas. Remove all sources of ignition. Take precautionary measures against static discharges.

6.2. Environmental precautions

Do not flush into surface water or sanitary sewer system.

6.3. Methods and material for containment and cleaning up

Soak up with inert absorbent material. Keep in suitable, closed containers for disposal. Remove all sources of ignition. Use spark-proof tools and explosion-proof equipment.

6.4. Reference to other sections

Refer to protective measures listed in Sections 8 and 13.

SECTION 7: HANDLING AND STORAGE

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7.1. Precautions for safe handling

Wear personal protective equipment/face protection. Do not get in eyes, on skin, or on clothing. Use only under a chemical fume hood. Do not breathe mist/vapors/spray. Do not ingest. If swallowed then seek immediate medical assistance. Keep away from open flames, hot surfaces and sources of ignition. Use only non-sparking tools. To avoid ignition of vapors by static electricity discharge, all metal parts of the equipment must be grounded. Take precautionary measures against static discharges.

Hygiene Measures

When using do not eat, drink or smoke. Provide regular cleaning of equipment, work area and clothing.

7.2. Conditions for safe storage, including any incompatibilities

Keep containers tightly closed in a dry, cool and well-ventilated place. Keep away from heat, sparks and flame. Flammables area.

Technical Rules for Hazardous Substances (TRGS) 510
Storage Class (LGK) (Germany)

Class 3

Switzerland - Storage of hazardous substances

Storage class - SC 3
<https://www.kvu.ch/de/themen/stoffe-und-produkte>
<https://www.kvu.ch/fr/themes/substances-et-produits>
<https://www.kvu.ch/it/temi/sostanze-e-prodotti>

7.3. Specific end use(s)

Use in laboratories

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Control parameters

Exposure limits

List source(s): **EU** - Commission Directive (EU) 2019/1831 of 24 October 2019 establishing a fifth list of indicative occupational exposure limit values pursuant to Council Directive 98/24/EC and amending Commission Directive 2000/39/EC **UK** - EH40/2005 Work Exposure Limits, Forth edition. Published 2020. **IRE** - 2010 Code of Practice for the Safety, Health and Welfare at Work (Chemical Agents) Regulations 2001. Published by the Health and Safety Authority. **CH** - The Government of Switzerland has set a directive on limit values for working materials (Grenzwerte am Arbeitsplatz) which is based on the Swiss Federal Regulation "Verordnung über die Verhütung von Unfällen und Berufskrankheiten". This directive is administered, periodically revised and enforced by SUVA (Swiss National Accident Insurance Fund).

| Component | European Union | The United Kingdom | France | Belgium | Spain |
|-----------|--|---|---|--|---|
| Methanol | TWA: 200 ppm 8 hr TWA: 260 mg/m ³ 8 hr Skin | WEL - TWA: 200 ppm TWA: 266 mg/m ³ TWA WEL - STEL: 250 ppm STEL: 333 mg/m ³ STEL | TWA / VME: 200 ppm (8 heures). restrictive limit TWA / VME: 260 mg/m ³ (8 heures). restrictive limit STEL / VLCT: 1000 ppm. restrictive limit STEL / VLCT: 1300 mg/m ³ . restrictive limit Peau | TWA: 200 ppm 8 uren TWA: 266 mg/m ³ 8 uren STEL: 250 ppm 15 minuten STEL: 333 mg/m ³ 15 minuten Huid | TWA / VLA-ED: 200 ppm (8 horas) TWA / VLA-ED: 266 mg/m ³ (8 horas) Piel |
| Iodine | | STEL: 0.1 ppm 15 min STEL: 1.1 mg/m ³ 15 min | STEL / VLCT: 0.1 ppm. STEL / VLCT: 1 mg/m ³ . | TWA: 0.01 ppm 8 uren TWA: 0.1 mg/m ³ 8 uren STEL: 0.1 ppm 15 minuten STEL: 1 mg/m ³ 15 minuten | STEL / VLA-EC: 0.1 ppm (15 minutos). STEL / VLA-EC: 1 mg/m ³ (15 minutos). TWA / VLA-ED: 0.01 ppm (8 horas) TWA / VLA-ED: 0.1 mg/m ³ (8 horas) |

| Component | Italy | Germany | Portugal | The Netherlands | Finland |
|-----------|---|---|--|---|---|
| Methanol | TWA: 200 ppm 8 ore. Time Weighted Average TWA: 260 mg/m ³ 8 ore. | 100 ppm TWA MAK; 130 mg/m ³ TWA MAKSkin absorber | STEL: 250 ppm 15 minutos TWA: 200 ppm 8 horas | huid TWA: 133 mg/m ³ 8 uren | TWA: 200 ppm 8 tunteina TWA: 270 mg/m ³ 8 |

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| | | | | | |
|--------|--------------------------------|------|--|--|---|
| | Time Weighted Average Pelle | | TWA: 260 mg/m ³ 8 horas Pele | | tunteina STEL: 250 ppm 15 minuutteina STEL: 330 mg/m ³ 15 minuutteina Iho |
| Iodine | | Haut | STEL: 0.1 ppm 15 minutos TWA: 0.01 ppm 8 horas | | STEL: 0.1 ppm 15 minuutteina STEL: 1.1 mg/m ³ 15 minuutteina Iho |

| Component | Austria | Denmark | Switzerland | Poland | Norway |
|-----------|--|---|---|---|---|
| Methanol | Haut MAK-KZGW: 800 ppm 15 Minuten MAK-KZGW: 1040 mg/m ³ 15 Minuten MAK-TMW: 200 ppm 8 Stunden MAK-TMW: 260 mg/m ³ 8 Stunden | TWA: 200 ppm 8 timer TWA: 260 mg/m ³ 8 timer STEL: 400 ppm 15 minutter STEL: 520 mg/m ³ 15 minutter Hud | Haut/Peau STEL: 400 ppm 15 Minuten STEL: 520 mg/m ³ 15 Minuten TWA: 200 ppm 8 Stunden TWA: 260 mg/m ³ 8 Stunden | STEL: 300 mg/m ³ 15 minutach TWA: 100 mg/m ³ 8 godzinach | TWA: 100 ppm 8 timer TWA: 130 mg/m ³ 8 timer STEL: 150 ppm 15 minutter. value calculated STEL: 162.5 mg/m ³ 15 minutter. value calculated Hud |
| Iodine | Haut MAK-KZGW: 0.1 ppm 15 Minuten MAK-KZGW: 1 mg/m ³ 15 Minuten MAK-TMW: 0.1 ppm 8 Stunden MAK-TMW: 1 mg/m ³ 8 Stunden Ceiling: 0.1 ppm Ceiling: 1 mg/m ³ | Ceiling: 0.1 ppm Ceiling: 1 mg/m ³ | Haut/Peau STEL: 0.1 ppm 15 Minuten STEL: 1 mg/m ³ 15 Minuten TWA: 0.1 ppm 8 Stunden TWA: 1 mg/m ³ 8 Stunden | STEL: 1 mg/m ³ 15 minutach TWA: 0.5 mg/m ³ 8 godzinach | Ceiling: 0.1 ppm Ceiling: 1 mg/m ³ |

| Component | Bulgaria | Croatia | Ireland | Cyprus | Czech Republic |
|-----------|---|--|---|--|---|
| Methanol | TWA: 200 ppm TWA: 260.0 mg/m ³ Skin notation | kože TWA-GVI: 200 ppm 8 satima. TWA-GVI: 260 mg/m ³ 8 satima. | TWA: 200 ppm 8 hr. TWA: 260 mg/m ³ 8 hr. STEL: 600 ppm 15 min STEL: 780 mg/m ³ 15 min Skin | Skin-potential for cutaneous absorption TWA: 200 ppm TWA: 260 mg/m ³ | TWA: 250 mg/m ³ 8 hodinách. Potential for cutaneous absorption Ceiling: 1000 mg/m ³ |
| Iodine | TWA: 3.0 mg/m ³ | STEL-KGVI: 0.1 ppm 15 minutama. STEL-KGVI: 1.1 mg/m ³ 15 minutama. | TWA: 0.01 ppm 8 hr. inhalable fraction and vapour TWA: 0.01 mg/m ³ 8 hr. STEL: 0.1 ppm 15 min | | TWA: 0.1 mg/m ³ 8 hodinách. Ceiling: 1 mg/m ³ |

| Component | Estonia | Gibraltar | Greece | Hungary | Iceland |
|-----------|--|---|--|---|---|
| Methanol | Nahk TWA: 200 ppm 8 tundides. TWA: 250 mg/m ³ 8 tundides. STEL: 250 ppm 15 minutites. STEL: 350 mg/m ³ 15 minutites. | Skin notation TWA: 200 ppm 8 hr TWA: 260 mg/m ³ 8 hr | skin - potential for cutaneous absorption STEL: 250 ppm STEL: 325 mg/m ³ TWA: 200 ppm TWA: 260 mg/m ³ | TWA: 260 mg/m ³ 8 órában. AK lehetséges bőrön keresztüli felszívódás | TWA: 200 ppm 8 klukkustundum. TWA: 260 mg/m ³ 8 klukkustundum. Skin notation Ceiling: 400 ppm Ceiling: 520 mg/m ³ |
| Iodine | STEL: 0.1 ppm 15 minutites. STEL: 1 mg/m ³ 15 minutites. | | STEL: 0.1 ppm STEL: 1 mg/m ³ TWA: 0.1 ppm TWA: 1 mg/m ³ | STEL: 1 mg/m ³ 15 percekben. CK TWA: 1 mg/m ³ 8 órában. AK lehetséges bőrön keresztüli felszívódás | STEL: 0.1 ppm STEL: 1 mg/m ³ |

| Component | Latvia | Lithuania | Luxembourg | Malta | Romania |
|-----------|--|---|---|---|---|
| Methanol | skin - potential for cutaneous exposure TWA: 200 ppm | TWA: 200 ppm IPRD TWA: 260 mg/m ³ IPRD Oda | Possibility of significant uptake through the skin TWA: 200 ppm 8 | possibility of significant uptake through the skin TWA: 200 ppm | Skin notation TWA: 200 ppm 8 ore TWA: 260 mg/m ³ 8 ore |

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| | | | | | |
|--------|----------------------------|--|--|----------------------------|---|
| | TWA: 260 mg/m ³ | | Stunden TWA: 260 mg/m ³ 8 Stunden | TWA: 260 mg/m ³ | |
| Iodine | TWA: 1 mg/m ³ | Ceiling: 0.1 ppm Ceiling: 1 mg/m ³ | | | TWA: 0.09 ppm 8 ore TWA: 0.5 mg/m ³ 8 ore STEL: 0.2 ppm 15 minute STEL: 1 mg/m ³ 15 minute |

| Component | Russia | Slovak Republic | Slovenia | Sweden | Turkey |
|-----------|---|---|---|---|--|
| Methanol | TWA: 5 mg/m ³ 1250 Skin notation MAC: 15 mg/m ³ | Potential for cutaneous absorption TWA: 200 ppm TWA: 260 mg/m ³ | TWA: 200 ppm 8 urah TWA: 260 mg/m ³ 8 urah Koža STEL: 800 ppm 15 minutah STEL: 1040 mg/m ³ 15 minutah | Indicative STEL: 250 ppm 15 minuter Indicative STEL: 350 mg/m ³ 15 minuter TLV: 200 ppm 8 timmar. NGV TLV: 250 mg/m ³ 8 timmar. NGV Hud | Deri TWA: 200 ppm 8 saat TWA: 260 mg/m ³ 8 saat |
| Iodine | Skin notation MAC: 1 mg/m ³ | Ceiling: 1.1 mg/m ³ TWA: 0.1 ppm TWA: 1.1 mg/m ³ | | Binding STEL: 0.1 ppm 15 minuter Binding STEL: 1 mg/m ³ 15 minuter | |

Biological limit values

List source(s):

| Component | European Union | United Kingdom | France | Spain | Germany |
|-----------|----------------|----------------|---|---|--|
| Methanol | | | Methanol: 15 mg/L urine end of shift | Methanol: 15 mg/L urine end of shift | Methanol: 15 mg/L urine (end of shift) Methanol: 15 mg/L urine (for long-term exposures: at the end of the shift after several shifts) |

| Component | Italy | Finland | Denmark | Bulgaria | Romania |
|-----------|-------|---------|---------|----------|--|
| Methanol | | | | | Methanol: 6 mg/L urine end of shift |

| Component | Gibraltar | Latvia | Slovak Republic | Luxembourg | Turkey |
|-----------|-----------|--------|---|------------|--------|
| Methanol | | | Methanol: 30 mg/L urine end of exposure or work shift Methanol: 30 mg/L urine after all work shifts for long-term exposure | | |

Monitoring methods

BS EN 14042:2003 Title Identifier: Workplace atmospheres. Guide for the application and use of procedures for the assessment of exposure to chemical and biological agents.

MDHS70 General methods for sampling airborne gases and vapours

MDHS 88 Volatile organic compounds in air. Laboratory method using diffusive samplers, solvent desorption and gas chromatography

MDHS 96 Volatile organic compounds in air - Laboratory method using pumped solid sorbent tubes, solvent desorption and gas chromatography

Derived No Effect Level (DNEL) / Derived Minimum Effect Level (DMEL)

See table for values

| Component | Acute effects local (Dermal) | Acute effects systemic (Dermal) | Chronic effects local (Dermal) | Chronic effects systemic (Dermal) |
|-----------|---------------------------------|------------------------------------|-----------------------------------|--------------------------------------|
|-----------|---------------------------------|------------------------------------|-----------------------------------|--------------------------------------|

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| | | | | |
|----------------------------|--|--------------------------|--|----------------------------|
| Methanol 67-56-1 (90) | | DNEL = 20mg/kg bw/day | | DNEL = 20mg/kg bw/day |
| Iodine 7553-56-2 (10) | | | | DNEL = 0.01mg/kg bw/day |

| Component | Acute effects local (Inhalation) | Acute effects systemic (Inhalation) | Chronic effects local (Inhalation) | Chronic effects systemic (Inhalation) |
|----------------------------|-------------------------------------|--|---------------------------------------|--|
| Methanol 67-56-1 (90) | DNEL = 130mg/m ³ | DNEL = 130mg/m ³ | DNEL = 130mg/m ³ | DNEL = 130mg/m ³ |
| Iodine 7553-56-2 (10) | | | | DNEL = 0.07mg/m ³ |

Predicted No Effect Concentration (PNEC)

See values below.

| Component | Fresh water | Fresh water sediment | Water Intermittent | Microorganisms in sewage treatment | Soil (Agriculture) |
|----------------------------|------------------|---------------------------------|--------------------|---------------------------------------|-----------------------------|
| Methanol 67-56-1 (90) | PNEC = 20.8mg/L | PNEC = 77mg/kg sediment dw | PNEC = 1540mg/L | PNEC = 100mg/L | PNEC = 100mg/kg soil dw |
| Iodine 7553-56-2 (10) | PNEC = 18.13µg/L | PNEC = 3.99mg/kg sediment dw | | PNEC = 11mg/L | PNEC = 5.95mg/kg soil dw |

| Component | Marine water | Marine water sediment | Marine water Intermittent | Food chain | Air |
|----------------------------|------------------|-------------------------------------|------------------------------|------------|-----|
| Methanol 67-56-1 (90) | PNEC = 2.08mg/L | PNEC = 7.7mg/kg sediment dw | | | |
| Iodine 7553-56-2 (10) | PNEC = 60.01µg/L | PNEC = 20.22mg/kg sediment dw | | | |

8.2. Exposure controls

Engineering Measures

Ensure adequate ventilation, especially in confined areas. Use explosion-proof electrical/ventilating/lighting/equipment. Ensure that eyewash stations and safety showers are close to the workstation location.

Wherever possible, engineering control measures such as the isolation or enclosure of the process, the introduction of process or equipment changes to minimise release or contact, and the use of properly designed ventilation systems, should be adopted to control hazardous materials at source

Personal protective equipment

Eye Protection

Tight sealing safety goggles Goggles (European standard - EN 166)

Hand Protection

Protective gloves

| Glove material | Breakthrough time | Glove thickness | EU standard | Glove comments |
|-----------------|-------------------|-----------------|-------------|-----------------------|
| Butyl rubber | > 480 minutes | 0.35 mm | Level 6 | (minimum requirement) |
| Viton (R) | > 480 minutes | 0.70 mm | EN 374 | |
| Neoprene gloves | < 60 minutes | 0.45 mm | | |
| Nitrile rubber | < 30 minutes | 0.38 mm | | |

Skin and body protection

Wear appropriate protective gloves and clothing to prevent skin exposure.

Inspect gloves before use. observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves. (Refer to manufacturer/supplier for information) gloves are suitable for the task: Chemical compatability, Dexterity, Operational conditions, User susceptibility, e.g. sensitisation effects, also take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion. gloves with care avoiding skin contamination.

Respiratory Protection

Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.

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| | |
|---------------------------------|---|
| | To protect the wearer, respiratory protective equipment must be the correct fit and be used and maintained properly |
| Large scale/emergency use | Use a NIOSH/MSHA or European Standard EN 136 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced Recommended Filter type: low boiling organic solvent Type AX Brown conforming to EN371 |
| Small scale/Laboratory use | Use a NIOSH/MSHA or European Standard EN 149:2001 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced. Recommended half mask:- Valve filtering: EN405; or; Half mask: EN140; plus filter, EN 141 When RPE is used a face piece Fit Test should be conducted |
| Environmental exposure controls | Prevent product from entering drains. Do not allow material to contaminate ground water system. |

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

| | | |
|---|---|--|
| Physical State | Liquid | |
| Appearance | Black - Red | |
| Odor | Alcohol-like | |
| Odor Threshold | No data available | |
| Melting Point/Range | No data available | |
| Softening Point | No data available | |
| Boiling Point/Range | > 64 °C / 147.2 °F | |
| Flammability (liquid) | Highly flammable | On basis of test data |
| Flammability (solid,gas) | Not applicable | Liquid |
| Explosion Limits | Lower ~ 6.0 vol % Upper ~ 36.0 vol % | |
| Flash Point | 11 °C / 51.8 °F | Method - No information available |
| Autoignition Temperature | 464 °C / 867.2 °F | |
| Decomposition Temperature | No data available | |
| pH | Not applicable | |
| Viscosity | No data available | |
| Water Solubility | Miscible | |
| Solubility in other solvents | No information available | |
| Partition Coefficient (n-octanol/water) | | |
| Component | log Pow | |
| Methanol | -0.74 | |
| Iodine | 2.49 | |
| Vapor Pressure | No data available | |
| Density / Specific Gravity | 0.84 | |
| Bulk Density | Not applicable | Liquid |
| Vapor Density | > 1.0 | (Air = 1.0) |
| Particle characteristics | Not applicable (liquid) | |

9.2. Other information

| | |
|----------------------|---|
| Explosive Properties | Vapors may form explosive mixtures with air |
|----------------------|---|

SECTION 10: STABILITY AND REACTIVITY

10.1. Reactivity

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None known, based on information available

10.2. Chemical stability

Stable under normal conditions.

10.3. Possibility of hazardous reactions

Hazardous Polymerization Hazardous Reactions

Hazardous polymerization does not occur.
None under normal processing.

10.4. Conditions to avoid

Incompatible products. Heat, flames and sparks. Keep away from open flames, hot surfaces and sources of ignition.

10.5. Incompatible materials

Strong oxidizing agents. Peroxides. Acids. Acid anhydrides. Acid chlorides. Metals.

10.6. Hazardous decomposition products

Carbon monoxide (CO). Carbon dioxide (CO₂). Formaldehyde.

SECTION 11: TOXICOLOGICAL INFORMATION

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

Product Information

(a) acute toxicity;

| | |
|------------|------------|
| Oral | Category 3 |
| Dermal | Category 3 |
| Inhalation | Category 3 |

Toxicology data for the components

| Component | LD50 Oral | LD50 Dermal | LC50 Inhalation |
|-----------|--------------------------------|-----------------------------|-----------------------------|
| Methanol | LD50 = 1187 – 2769 mg/kg (Rat) | LD50 = 17100 mg/kg (Rabbit) | LC50 = 128.2 mg/L (Rat) 4 h |
| Iodine | 315 mg/kg (Rat) | 1425 mg/kg (Rabbit) | 4.588 mg/L 4h (Rat) |

(b) skin corrosion/irritation; Category 2

(c) serious eye damage/irritation; Category 2

(d) respiratory or skin sensitization;

| | |
|-------------|-------------------|
| Respiratory | No data available |
| Skin | No data available |

| Component | Test method | Test species | Study result |
|----------------------------|---|--------------|-----------------|
| Methanol 67-56-1 (90) | OECD Test Guideline 406 Guinea Pig Maximisation Test (GPMT) | guinea pig | non-sensitising |
| Iodine 7553-56-2 (10) | OECD Test Guideline 429 Local Lymph Node Assay | mouse | non-sensitising |

(e) germ cell mutagenicity; No data available

(f) carcinogenicity; No data available

There are no known carcinogenic chemicals in this product

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(g) reproductive toxicity; No data available

| Component | Test method | Test species / Duration | Study result |
|----------------------------|-------------------------|----------------------------------|---------------------------|
| Methanol 67-56-1 (90) | OECD Test Guideline 416 | Rat / Inhalation 2 Generation | NOAEC = 1.3 mg/l (air) |

(h) STOT-single exposure; Category 1

Results / Target organs Optic nerve, Central nervous system (CNS).

(i) STOT-repeated exposure; Category 1

Target Organs Thyroid.

(j) aspiration hazard; No data available

Symptoms / effects, both acute and delayed Inhalation of high vapor concentrations may cause symptoms like headache, dizziness, tiredness, nausea and vomiting.

11.2. Information on other hazards

Endocrine Disrupting Properties Assess endocrine disrupting properties for human health. This product does not contain any known or suspected endocrine disruptors.

SECTION 12: ECOLOGICAL INFORMATION

12.1. Toxicity

Ecotoxicity effects

Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment. The product contains following substances which are hazardous for the environment.

| Component | Freshwater Fish | Water Flea | Freshwater Algae |
|-----------|--|-----------------------|----------------------|
| Methanol | Pimephales promelas: LC50 > 10000 mg/L 96h | EC50 > 10000 mg/L 24h | |
| Iodine | LC50 = 1.67 mg/L 96h | EC50 = 0.55 mg/L 48h | EC50 = 0.13 mg/L 72h |

| Component | Microtox | M-Factor |
|-----------|---|----------|
| Methanol | EC50 = 39000 mg/L 25 min EC50 = 40000 mg/L 15 min EC50 = 43000 mg/L 5 min | |
| Iodine | EC50 = 280 mg/L 3h | 1 |

12.2. Persistence and degradability

Persistence Persistence is unlikely, based on information available.

| Component | Degradability |
|----------------------------|--------------------------------|
| Methanol 67-56-1 (90) | DT50 ~ 17.2d >94% after 20d |

Degradation in sewage treatment plant Contains substances known to be hazardous to the environment or not degradable in waste water treatment plants.

12.3. Bioaccumulative potential

Bioaccumulation is unlikely

| Component | log Pow | Bioconcentration factor (BCF) |
|-----------|---------|-------------------------------|
| Methanol | -0.74 | <10 dimensionless |

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| | | |
|--------|------|-------------------|
| Iodine | 2.49 | No data available |
|--------|------|-------------------|

12.4. Mobility in soil

The product contains volatile organic compounds (VOC) which will evaporate easily from all surfaces. Will likely be mobile in the environment due to its volatility. Disperses rapidly in air.

12.5. Results of PBT and vPvB assessment

No data available for assessment.

12.6. Endocrine disrupting properties

Endocrine Disruptor Information

This product does not contain any known or suspected endocrine disruptors.

12.7. Other adverse effects Persistent Organic Pollutant Ozone Depletion Potential

This product does not contain any known or suspected substance.
This product does not contain any known or suspected substance.

SECTION 13: DISPOSAL CONSIDERATIONS

13.1. Waste treatment methods

Waste from Residues/Unused Products

Waste is classified as hazardous. Dispose of in accordance with the European Directives on waste and hazardous waste. Dispose of in accordance with local regulations.

Contaminated Packaging

Dispose of this container to hazardous or special waste collection point. Empty containers retain product residue, (liquid and/or vapor), and can be dangerous. Keep product and empty container away from heat and sources of ignition.

European Waste Catalogue (EWC)

According to the European Waste Catalog, Waste Codes are not product specific, but application specific.

Other Information

Do not flush to sewer. Waste codes should be assigned by the user based on the application for which the product was used. Can be landfilled or incinerated, when in compliance with local regulations.

Switzerland - Waste Ordinance

Disposal should be in accordance with applicable regional, national and local laws and regulations. Ordinance on the Avoidance and the Disposal of Waste (Waste Ordinance, ADWO) SR 814.600
<https://www.fedlex.admin.ch/eli/cc/2015/891/en>

SECTION 14: TRANSPORT INFORMATION

IMDG/IMO

14.1. UN number

UN1230

14.2. UN proper shipping name

METHANOL SOLUTION

14.3. Transport hazard class(es)

3

Subsidiary Hazard Class

6.1

14.4. Packing group

II

ADR

14.1. UN number

UN1230

14.2. UN proper shipping name

METHANOL SOLUTION

14.3. Transport hazard class(es)

3

Subsidiary Hazard Class

6.1

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14.4. Packing group II

IATA

14.1. UN number UN1230
14.2. UN proper shipping name METHANOL SOLUTION
14.3. Transport hazard class(es) 3
Subsidiary Hazard Class 6.1
14.4. Packing group II

14.5. Environmental hazards No hazards identified

14.6. Special precautions for user No special precautions required.

14.7. Maritime transport in bulk according to IMO instruments Not applicable, packaged goods

SECTION 15: REGULATORY INFORMATION

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

International Inventories

Europe (EINECS/ELINCS/NLP), China (IECSC), Taiwan (TCSI), Korea (KECL), Japan (ENCS), Japan (ISHL), Canada (DSL/NDSL), Australia (AICS), New Zealand (NZIoC), Philippines (PICCS). US EPA (TSCA) - Toxic Substances Control Act, (40 CFR Part 710)

| Component | CAS No | EINECS | ELINCS | NLP | IECSC | TCSI | KECL | ENCS | ISHL |
|-----------|-----------|-----------|--------|-----|-------|------|----------|------|------|
| Methanol | 67-56-1 | 200-659-6 | - | - | X | X | KE-23193 | X | X |
| Iodine | 7553-56-2 | 231-442-4 | - | - | X | X | KE-21023 | X | - |

| Component | CAS No | TSCA | TSCA Inventory notification - Active-Inactive | DSL | NDSL | AICS | NZIoC | PICCS |
|-----------|-----------|------|---|-----|------|------|-------|-------|
| Methanol | 67-56-1 | X | ACTIVE | X | - | X | X | X |
| Iodine | 7553-56-2 | X | ACTIVE | X | - | X | X | X |

Legend: X - Listed '-' - Not Listed

KECL - NIER number or KE number (<http://ncis.nier.go.kr/en/main.do>)

Authorisation/Restrictions according to EU REACH

| Component | CAS No | REACH (1907/2006) - Annex XIV - Substances Subject to Authorization | REACH (1907/2006) - Annex XVII - Restrictions on Certain Dangerous Substances | REACH Regulation (EC 1907/2006) article 59 - Candidate List of Substances of Very High Concern (SVHC) |
|-----------|-----------|---|--|---|
| Methanol | 67-56-1 | - | Use restricted. See item 69. (see link for restriction details) Use restricted. See item 75. (see link for restriction details) | - |
| Iodine | 7553-56-2 | - | Use restricted. See item 75. (see link for restriction details) | - |

REACH links

<https://echa.europa.eu/substances-restricted-under-reach>

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Seveso III Directive (2012/18/EC)

| Component | CAS No | Seveso III Directive (2012/18/EC) - Qualifying Quantities for Major Accident Notification | Seveso III Directive (2012/18/EC) - Qualifying Quantities for Safety Report Requirements |
|-----------|-----------|---|--|
| Methanol | 67-56-1 | 500 tonne | 5000 tonne |
| Iodine | 7553-56-2 | Not applicable | Not applicable |

Regulation (EC) No 649/2012 of the European Parliament and of the Council of 4 July 2012 concerning the export and import of dangerous chemicals
Not applicable

Contains component(s) that meet a 'definition' of per & poly fluoroalkyl substance (PFAS)?
Not applicable

Take note of Directive 98/24/EC on the protection of the health and safety of workers from the risks related to chemical agents at work .

Take note of Directive 2000/39/EC establishing a first list of indicative occupational exposure limit values

National Regulations

UK - Take note of Control of Substances Hazardous to Health Regulations (COSHH) 2002 and 2005 Amendment

WGK Classification Water endangering class = 2 (self classification)

| Component | Germany - Water Classification (AwSV) | Germany - TA-Luft Class |
|-----------|---------------------------------------|--|
| Methanol | WGK 2 | Class I : 20 mg/m³ (Massenkonzentration) |
| Iodine | WGK2 | |

| Component | France - INRS (Tables of occupational diseases) |
|-----------|--|
| Methanol | Tableaux des maladies professionnelles (TMP) - RG 84 |

Swiss Regulations

Article 4 para. 4 of the Ordinance on the protection of young people in the workplace (SR 822.115) and Article 1 lit. f of the EAER regulation on hazardous work and young people (SR 822.115.2).

Take note on Article 13 Maternity Ordinance (SR 822.111.52) with regards expectant and nursing mothers.

| Component | Switzerland - Ordinance on the Reduction of Risk from handling of hazardous substances preparation (SR 814.81) | Switzerland - Ordinance on Incentive Taxes on Volatile Organic Compounds (OVOC) | Switzerland - Ordinance of the Rotterdam Convention on the Prior Informed Consent Procedure |
|----------------------------|--|---|--|
| Methanol 67-56-1 (90) | Prohibited and Restricted Substances | Group I | |
| Iodine 7553-56-2 (10) | Prohibited and Restricted Substances | | |

15.2. Chemical safety assessment

Chemical Safety Assessment/Reports (CSA/CSR) are not required for mixtures

SECTION 16: OTHER INFORMATION

Full text of H-Statements referred to under sections 2 and 3

H301 - Toxic if swallowed

H311 - Toxic in contact with skin

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H331 - Toxic if inhaled
H315 - Causes skin irritation
H319 - Causes serious eye irritation
H370 - Causes damage to organs
H372 - Causes damage to organs through prolonged or repeated exposure
H225 - Highly flammable liquid and vapor
H302 - Harmful if swallowed
H312 - Harmful in contact with skin
H332 - Harmful if inhaled
H335 - May cause respiratory irritation
H400 - Very toxic to aquatic life

Legend

CAS - Chemical Abstracts Service

EINECS/ELINCS - European Inventory of Existing Commercial Chemical Substances/EU List of Notified Chemical Substances

PICCS - Philippines Inventory of Chemicals and Chemical Substances

IECSC - Chinese Inventory of Existing Chemical Substances

KECL - Korean Existing and Evaluated Chemical Substances

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory

DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List

ENCS - Japanese Existing and New Chemical Substances

AICS - Australian Inventory of Chemical Substances

NZIoC - New Zealand Inventory of Chemicals

WEL - Workplace Exposure Limit

ACGIH - American Conference of Governmental Industrial Hygienists

DNEL - Derived No Effect Level

RPE - Respiratory Protective Equipment

LC50 - Lethal Concentration 50%

NOEC - No Observed Effect Concentration

PBT - Persistent, Bioaccumulative, Toxic

TWA - Time Weighted Average

IARC - International Agency for Research on Cancer
Predicted No Effect Concentration (PNEC)

LD50 - Lethal Dose 50%

EC50 - Effective Concentration 50%

POW - Partition coefficient Octanol:Water

vPvB - very Persistent, very Bioaccumulative

ADR - European Agreement Concerning the International Carriage of Dangerous Goods by Road

IMO/IMDG - International Maritime Organization/International Maritime Dangerous Goods Code

OECD - Organisation for Economic Co-operation and Development

BCF - Bioconcentration factor

Key literature references and sources for data

<https://echa.europa.eu/information-on-chemicals>

Suppliers safety data sheet, Chemadviser - LOLI, Merck index, RTECS

ICAO/IATA - International Civil Aviation Organization/International Air Transport Association

MARPOL - International Convention for the Prevention of Pollution from Ships

ATE - Acute Toxicity Estimate

VOC - (volatile organic compound)

Classification and procedure used to derive the classification for mixtures according to Regulation (EC) 1272/2008 [CLP]:

Physical hazards On basis of test data

Health Hazards Calculation method

Environmental hazards Calculation method

Training Advice

Chemical hazard awareness training, incorporating labelling, Safety Data Sheets (SDS), Personal Protective Equipment (PPE) and hygiene.

Use of personal protective equipment, covering appropriate selection, compatibility, breakthrough thresholds, care, maintenance, fit and standards.

First aid for chemical exposure, including the use of eye wash and safety showers.

Chemical incident response training.

Fire prevention and fighting, identifying hazards and risks, static electricity, explosive atmospheres posed by vapours and dusts.

Creation Date 22-Nov-2010

Revision Date 20-Oct-2023

Revision Summary Not applicable.

**This safety data sheet complies with the requirements of Regulation (EC) No. 1907/2006.
COMMISSION REGULATION (EU) 2020/878 amending Annex II to Regulation (EC) No
1907/2006 .**

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For Switzerland - Compiled in accordance with the technical provisions referred to in Annex 2, Number 3, ChemO (SR 813.11 - Ordinance on Protection against Dangerous Substances and Preparations).

Disclaimer

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text

End of Safety Data Sheet