We create chemistry

Safety data sheet

BASF Safety data sheet according to Regulation UK SI 2019/758 and UK SI 2020/1577 as amended from time to time.
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Product: **Luprosil®**

(ID no. 30041113/SDS_GEN_GB/EN)
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SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Luprosil®

Chemical name: propionic acid
CAS Number: 79-09-4

REACH registration number: 01-2119486971-24-0000

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

Relevant identified uses: feed additive(s)

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

Contact address:
BASF plc
4th and 5th Floors, 2 Stockport Exchange
Railway Road, Stockport, SK1 3GG
UNITED KINGDOM

Telephone: +44 161 475 3000
E-mail address: product-safety-uk-and-ireland@basf.com

1.4. Emergency telephone number

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

SECTION 2: Hazards Identification

2.1. Classification of the substance or mixture

According to GB-CLP Regulations UK SI 2019/720 and UK SI 2020/1567

Flam. Liq. 3	H226 Flammable liquid and vapour.
Skin Corr./Irrit. 1B	H314 Causes severe skin burns and eye damage.
Eye Dam./Irrit. 1	H318 Causes serious eye damage.
STOT SE 3	H335 May cause respiratory irritation.

Specific Concentration Limits According to Regulation (EC) No 1272/2008 [CLP]

STOT SE 3, irr. to respiratory syst.: >= 10 %
Skin Corr./Irrit. 2: 10 - < 25 %
Eye Dam./Irrit. 2: 10 - < 25 %
Skin Corr./Irrit. 1B: >= 25 %

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 GB-CLP Regulations UK SI 2019/720 and UK SI 2020/1567

Pictogram:

Signal Word:
Danger

Hazard Statement:

H226	Flammable liquid and vapour.
H335	May cause respiratory irritation.
H314	Causes severe skin burns and eye damage.

Precautionary Statements (Prevention):

P280	Wear protective gloves, protective clothing and eye protection or face protection.
P271	Use only outdoors or in a well-ventilated area.
P210	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P243	Take action to prevent static discharges.
P260	Do not breathe dust or mist.
P241	Use explosion-proof electrical, ventilating and lighting equipment.
P264	Wash contaminated body parts thoroughly after handling.
P240	Ground and bond container and receiving equipment.
P242	Use non-sparking tools.

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.
P303 + P361 + P353	IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower.
P304 + P340	IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P301 + P330 + P331	IF SWALLOWED: rinse mouth. Do NOT induce vomiting.
P370 + P378	In case of fire: Use water spray, dry powder, foam or carbon dioxide for extinction.

Precautionary Statements (Storage):

P233	Keep container tightly closed.
P403 + P235	Store in a well-ventilated place. Keep cool.
P405	Store locked up.

Precautionary Statements (Disposal):

P501	Dispose of contents and container to hazardous or special waste collection point.

Hazard determining component(s) for labelling: propionic acid ... %

2.3. Other hazards

According to GB-CLP Regulations UK SI 2019/720 and UK SI 2020/1567

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.

SECTION 3: Composition/Information on Ingredients

3.1. Substances

Chemical nature

carboxylic acid

Hazardous ingredients (GHS)

propionic acid ... %

Content (W/W): >= 99.5 % - <= 100 % CAS Number: 79-09-4 EC-Number: 201-176-3 INDEX-Number: 607-089-00-0	Flam. Liq. 3 Skin Corr./Irrit. 1B Eye Dam./Irrit. 1 STOT SE 3 (irr. to respiratory syst.) H226, H335, H314 Specific concentration limit: Eye Dam./Irrit. 2: 10 - < 25 % Skin Corr./Irrit. 1B: >= 25 % Skin Corr./Irrit. 2: 10 - < 25 % STOT SE 3, irr. to respiratory syst.: >= 10 %

acetic acid ... %

Content (W/W): >= 0 % - <= 0.2 % CAS Number: 64-19-7 EC-Number: 200-580-7 INDEX-Number: 607-002-00-6	Flam. Liq. 3 Skin Corr./Irrit. 1A Eye Dam./Irrit. 1 H226, H314 Specific concentration limit: Skin Corr./Irrit. 2: 10 - < 25 % Eye Dam./Irrit. 2: 10 - < 25 % Skin Corr./Irrit. 1A: >= 90 % Skin Corr./Irrit. 1B: 25 - < 90 %

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

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.

4.3. Indication of any immediate medical attention and special treatment needed
Treatment: Treat according to symptoms (decontamination, vital functions), no known specific antidote.

SECTION 5: Fire-Fighting Measures

5.1. Extinguishing media
Suitable extinguishing media:
water spray, dry powder, foam, carbon dioxide

5.2. Special hazards arising from the substance or mixture
Endangering substances: carbon oxides, nitrogen oxides
Advice: The substances/groups of substances mentioned can be released in case of fire.

5.3. Advice for fire-fighters
Special protective equipment:
Wear self-contained breathing apparatus and chemical-protective clothing.

Further information:
Collect contaminated extinguishing water separately, do not allow to reach sewage or effluent systems.

SECTION 6: Accidental Release Measures

6.1. Personal precautions, protective equipment and emergency procedures
Personal protection: wear a tightly closed chemical protection suit and a self-contained breathing apparatus. Wear acid-resistant boots.

6.2. Environmental precautions
Do not empty into drains.

6.3. Methods and material for containment and cleaning up
For large amounts: Pump off product.
For residues: Pick up with suitable absorbent material (e.g. sand, sawdust, general-purpose binder, kieselguhr). 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

Ensure thorough ventilation of stores and work areas. When using do not eat, drink or smoke. Hands and/or face should be washed before breaks and at the end of the shift. Change clothes immediately after contamination.

Protection against fire and explosion:
Prevent electrostatic charge - sources of ignition should be kept well clear - fire extinguishers should be kept handy.

7.2. Conditions for safe storage, including any incompatibilities

Segregate from alkalies and alkalizing substances.
Further information on storage conditions: Keep container tightly closed in a cool, well-ventilated place.

Storage stability:
Storage temperature: < 30 °C
Storage duration: <= 36 Months
From the data on storage duration in this safety data sheet no agreed statement regarding the warrantee of application properties can be deduced.

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

64-19-7: acetic acid ... %
TWA value 25 mg/m3 ; 10 ppm (OEL (EU))
indicative
TWA value 25 mg/m3 ; 10 ppm (WEL/EH 40 (UK))
STEL value 50 mg/m3 ; 20 ppm (WEL/EH 40 (UK))
Ceiling limit value/factor: 15 min

79-09-4: propionic acid ... %
TWA value 31 mg/m3 ; 10 ppm (WEL/EH 40 (UK))
STEL value 62 mg/m3 ; 20 ppm (OEL (EU))
indicative
TWA value 31 mg/m3 ; 10 ppm (OEL (EU))
indicative

STEL value 46 mg/m3 ; 15 ppm (WEL/EH 40 (UK))
Ceiling limit value/factor: 15 min

PNEC
freshwater: 0.5 mg/l

marine water: 0.05 mg/l

intermittent release: 5 mg/l

sediment (freshwater): 1.86 mg/kg

sediment (marine water): 0.186 mg/kg

soil: 0.1258 mg/kg

STP: 5 mg/l

DNEL
worker:
Long-term exposure- systemic effects, Inhalation: 73 mg/m3

worker:
Long-term exposure - local effects, Inhalation: 31 mg/m3

worker:
Short-term exposure - local effects, Inhalation: 62 mg/m3

consumer:
Long-term exposure- systemic effects, Inhalation: 18.3 mg/m3

worker:
Long-term exposure- systemic effects, dermal: 20.9 mg/kg

consumer:
Long-term exposure - local effects, Inhalation: 3.7 mg/m3

consumer:
Short-term exposure - local effects, Inhalation: 30.8 mg/m3

consumer:
Long-term exposure- systemic effects, dermal: 10.5 mg/kg

consumer:
Long-term exposure- systemic effects, oral: 10.5 mg/kg

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)

Consider the risk management measures as outlined in the exposure scenario.

Hand protection:
Chemical resistant protective gloves (EN ISO 374-1)
Suitable materials also with prolonged, direct contact (Recommended: Protective index 6, corresponding > 480 minutes of permeation time according to EN ISO 374-1):
butyl rubber (butyl) - 0.7 mm coating thickness
Suitable materials for short-term contact (recommended: At least protective index 2, corresponding > 30 minutes of permeation time according to EN ISO 374-1)
nitrile rubber (NBR) - 0.4 mm coating thickness
chloroprene rubber (CR) - 0.5 mm coating thickness

Eye protection:
Tightly fitting safety goggles (cage goggles) (e.g. EN 166) and face shield.

Body protection:
acid-proof chemical protection suit (f.e. according to EN 14605)

General safety and hygiene measures
Avoid contact with the skin, eyes and clothing. Avoid inhalation of vapour. Avoid contact with skin and eyes. Take off immediately all contaminated clothing.

SECTION 9: Physical and Chemical Properties

9.1. Information on basic physical and chemical properties

Form:	liquid	
Colour:	colourless	
Odour:	pungent	
Odour threshold:	not determined	
pH value:	2.5 (100 g/l, 20 °C) Literature data.	
Melting point:	-20 °C	
Boiling point:	140.7 - 141.6 °C	
Flash point:	53 °C	(ISO 13736, closed cup)
Evaporation rate:	Value can be approximated from Henry's Law Constant or vapor pressure.	
Flammability:	Flammable liquid and vapour.	(derived from flash point)

Lower explosion limit:		
	For liquids not relevant for classification and labelling., The lower explosion point may be 5 - 15 °C below the flash point.	
Upper explosion limit:		
	For liquids not relevant for classification and labelling.	
Ignition temperature:	485 °C	(DIN 51794)
Vapour pressure:	5 mbar (20 °C) approx. 23 hPa (50 °C)	
Density:	0.993 g/cm3 (20 °C) Literature data. 0.957 g/cm3 (55 °C) Literature data. 0.9990 g/cm3 (15 °C) 0.9610 g/cm3 (50 °C)	
Relative vapour density (air):	> 1 (20 °C) Heavier than air.	(estimated)
Solubility in water:	miscible (20 °C)	
Partitioning coefficient n-octanol/water (log Kow):	0.25 (25 °C) 0.33	 (Calculation Hansch/Leo)
Self ignition:	Based on its structural properties the product is not classified as self-igniting.	Test type: Spontaneous self-ignition at room-temperature.
Thermal decomposition:	not determined	
Viscosity, dynamic:	1.102 mPa.s (20 °C) Literature data.	
Fire promoting properties:	Based on its structural properties the product is not classified as oxidizing.	

9.2. Other information

Self heating ability:	not applicable, the product is a liquid
SADT:	Not a substance/mixture liable to self-decomposition according to GHS.

pKA:	4.87 (20 °C)	
Adsorption/water - soil:	KOC: 1.201; log KOC: 0.08 The data refer to the uncharged form of the substance. Under environmental conditions, the substance will almost completely be in its charged form.	(calculated)
Surface tension:	Based on chemical structure, surface activity is not to be expected.	
Grain size distribution:	Test substance	The substance / product is marketed or used in a non solid or granular form.
Molar mass:	74.08 g/mol	

SECTION 10: Stability and Reactivity

10.1. Reactivity

Corrosion to metals:	Corrosive effects to metal are not anticipated. In the presence of water or moisture metal corrosion cannot be excluded.	
Formation of flammable gases:	Remarks:	Forms no flammable gases in the presence of water.

10.2. Chemical stability
The product is chemically stable.

10.3. Possibility of hazardous reactions
Reacts with strong alkalies. Exothermic reaction.

10.4. Conditions to avoid
No conditions to avoid anticipated.

10.5. Incompatible materials

Substances to avoid:
bases, non-coated metals, base metals

10.6. Hazardous decomposition products

No hazardous decomposition products known.

SECTION 11: Toxicological Information

11.1. Information on toxicological effects

Acute toxicity

Assessment of acute toxicity:

Of low toxicity after single ingestion. Virtually nontoxic by inhalation. Of low toxicity after short-term skin contact. Inhalation-risk test (IRT): No mortality within 8 hours as shown in animal studies. The inhalation of a highly saturated vapor-air mixture represents no acute hazard.

Experimental/calculated data:
LD50 rat (oral): 3,455 mg/kg (similar to OECD guideline 401)

LC50 rat (by inhalation): > 19.7 mg/l 1 h (OECD Guideline 403)
The vapour was tested.

LC0 rat (by inhalation): 24.4 mg/l 8 h (IRT)
Literature data. No mortality within the stated exposition time as shown in animal studies. The vapour was tested.

LD50 rat (dermal): 3,235 mg/kg (similar to OECD guideline 402)

Irritation

Assessment of irritating effects:
Corrosive! Damages skin and eyes.

Experimental/calculated data:
Skin corrosion/irritation
rabbit: Corrosive. (BASF-Test)

Serious eye damage/irritation
rabbit: irreversible damage (Draize test)
Literature data.

Respiratory/Skin sensitization

Assessment of sensitization:
Skin sensitizing effects were not observed in animal studies.

Experimental/calculated data:
Guinea pig maximization test guinea pig: Non-sensitizing. (similar to OECD guideline 406)
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. The product has not been fully tested. The statements have been derived in parts from products of a similar structure or composition.

Carcinogenicity

Assessment of carcinogenicity:
In long-term animal studies in which the substance was given in high concentrations by feed, a carcinogenic effect was not observed.

Reproductive toxicity

Assessment of reproduction toxicity:
No data available. Study scientifically not justified.

Developmental toxicity

Assessment of teratogenicity:
No indications of a developmental toxic / teratogenic effect were seen in animal studies. The product has not been tested. The statement has been derived from substances/products of a similar structure or composition.

Specific target organ toxicity (single exposure)

Assessment of STOT single:
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. After repeated administration the prominent effect is the induction of corrosion.

Aspiration hazard

No aspiration hazard expected.

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) > 10,000 mg/l, Leuciscus idus (DIN 38412 Part 15, static)
The product has not been tested. The statement has been derived from substances/products of a similar structure or composition.

Aquatic invertebrates:
EC50 (48 h) > 500 mg/l, Daphnia magna (Directive 84/449/EEC, C.2, static)

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

Aquatic plants:
EC50 (72 h) > 500 mg/l (biomass), Scenedesmus subspicatus (OECD Guideline 201, static)
The product has not been tested. The statement has been derived from substances/products of a similar structure or composition.

Microorganisms/Effect on activated sludge:
EC20 (30 min) 500 - 1,040 mg/l, activated sludge, domestic (DIN EN ISO 8192, aquatic)
The product has not been tested. The statement has been derived from substances/products of a similar structure or composition.

Chronic toxicity to fish:
Study scientifically not justified.

Chronic toxicity to aquatic invertebrates:
Study scientifically not justified.

Assessment of terrestrial toxicity:
Toxic effects have been observed in studies with terrestric plants.

Soil living organisms:
No data available.

Terrestrial plants:
EC50 (3 d) 125.8 mg/l 188.7 mg/kg, Lactuca sativa
Literature data.

Other terrestrial non-mammals:
No data available.

12.2. Persistence and degradability

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

Elimination information:
approx. 74 % BOD of the ThOD (30 d) (other) (aerobic, activated sludge, domestic)

Assessment of stability in water:
According to structural properties, hydrolysis is not expected/probable.
Information on Stability in Water (Hydrolysis):
The product has not been tested. The statement has been derived from the structure of the product.

12.3. Bioaccumulative potential

Assessment bioaccumulation potential:
Significant accumulation in organisms is not to be expected.

Bioaccumulation potential:
Accumulation in organisms is not to be expected.

12.4. Mobility in soil

Assessment transport between environmental compartments:
Volatility: The substance will not 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. Other adverse effects

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

12.7. Additional information

Sum parameter

Chemical oxygen demand (COD): 1,520 mg/g

Biochemical oxygen demand (BOD) Incubation period 5 d: 1,300 mg/g

SECTION 13: Disposal Considerations

13.1. Waste treatment methods

Incinerate in suitable incineration plant, observing local authority regulations.

The UK Environmental Protection (Duty of Care) Regulations (EP) and amendments should be noted (United Kingdom).
This product and any uncleaned containers must be disposed of as hazardous waste in accordance with the 2005 Hazardous Waste Regulations and amendments (United Kingdom)

Contaminated packaging:
Contaminated packaging should be emptied as far as possible; then it can be passed on for recycling after being thoroughly cleaned.

SECTION 14: Transport Information

Land transport

ADR

UN number or ID number:	UN3463
UN proper shipping name:	PROPIONIC ACID
Transport hazard class(es):	8, 3
Packing group:	II
Environmental hazards:	no
Special precautions for user:	Tunnel code: D/E

RID

UN number or ID number:	UN3463
UN proper shipping name:	PROPIONIC ACID
Transport hazard class(es):	8, 3
Packing group:	II
Environmental hazards:	no
Special precautions for user:	None known

Inland waterway transport

ADN

UN number or ID number:	UN3463
UN proper shipping name:	PROPIONIC ACID
Transport hazard class(es):	8, 3
Packing group:	II
Environmental hazards:	no
Special precautions for user:	None known

Transport in inland waterway vessel

UN number or ID number:	UN3463
UN proper shipping name:	PROPIONIC ACID
Transport hazard class(es):	8, 3, N3
Packing group:	II
Environmental hazards:	yes
Type of inland waterway vessel:	N
Cargo tank design:	3
Cargo tank type:	3

Sea transport

IMDG

UN number or ID number:	UN 3463
UN proper shipping name:	PROPIONIC ACID
Transport hazard class(es):	8, 3
Packing group:	II
Environmental hazards:	no Marine pollutant: NO
Special precautions for user:	

Air transport

IATA/ICAO

UN number or ID number:	UN 3463
UN proper shipping name:	PROPIONIC ACID
Transport hazard class(es):	8, 3
Packing group:	II
Environmental hazards:	No Mark as dangerous for the environment is needed
Special precautions for user:	None known

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:	Propionic acid
Pollution category:	Y
Ship Type:	3

Further information
This product is subject to the most recent edition of "The Carriage of Dangerous Goods and Use of Transportable Pressure Equipment Regulations" and their amendments (United Kingdom).

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: 3, 40, 75

Directive 2012/18/EU - Control of Major Accident Hazards involving dangerous substances (EU):
List entry in regulation: P5c

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

The data should be considered when making any assessment under the Control of Substances Hazardous to Health Regulations (COSHH), and related guidance, for example, 'COSHH Essentials' (United Kingdom).
This product may be subject to the Control of Major Accident Hazards Regulations (COMAH), and amendments if specific threshold tonnages are exceeded (United Kingdom).

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)

Skin Corr./Irrit. 1B
Acute Tox. 5 (oral)
Flam. Liq. 3

Eye Dam./Irrit. 1
Acute Tox. 5 (dermal)
STOT SE 3 (irritating to respiratory system)

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
H226	Flammable liquid and vapour.
H335	May cause respiratory irritation.
H314	Causes severe skin burns and eye damage.

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 = Intermediate 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 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.

Annex: Exposure Scenarios

Index
1. Animal nutrition
PW; ERC8a, ERC8d; PROC5, PROC11

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1. Short title of exposure scenario
Animal nutrition
PW; ERC8a, ERC8d; PROC5, PROC11

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	PROC5: Mixing or blending in batch processes Use domain: professional
Operational conditions	
Concentration of the substance	propionic acid ... % Content: >= 0 % - <= 100 %
Physical state	liquid
Vapour pressure of the substance during use	39 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 %
Use suitable chemically resistant gloves.	Effectiveness: 80 %
Wear suitable personal protective equipment., In case of potential exposure:, Wear suitable respiratory protection.	
Exposure estimate and reference to its source	
Assessment method	EASY TRA v4.1, ECETOC TRA v3.0, Worker
	Worker - dermal, long-term - systemic
Exposure estimate	2.7429 mg/kg bw/day
Risk Characterization Ratio (RCR)	0.131237
Assessment method	EASY TRA v4.1, ECETOC TRA v3.0, Worker
	Worker - inhalation, long-term - systemic
Exposure estimate	21.6067 mg/m³
Risk Characterization Ratio (RCR)	0.295982
Assessment method	EASY TRA v4.1, ECETOC TRA v3.0, Worker
	Worker - inhalation, long-term - local
Exposure estimate	21.6067 mg/m³
Risk Characterization Ratio (RCR)	0.696989
Guidance to Downstream Users	
For scaling see: http://www.ecetoc.org/tra	

Contributing exposure scenario	
Use descriptors covered	PROC11: Non industrial spraying Use domain: professional
Operational conditions	
Concentration of the substance	propionic acid ... % Content: >= 0 % - <= 10 %
Physical state	liquid
Vapour pressure of the substance during use	39 Pa
Process temperature	20 °C
Duration and Frequency of activity	480 min 5 days per week
Indoor/Outdoor	Indoor
Risk Management Measures	
Wear chemically resistant gloves in combination with ‘basic’ employee training.	Effectiveness: 90 %
Ensure doors and windows are opened (general ventilation). Regular inspection and maintenance of	

equipment and machines. Ensure that the task is being carried out outside the breathing zone of a worker (distance head-product greater than 1m). Ensure that the task is not carried out by more than one worker simultaneously.	
Wear suitable personal protective equipment., Reduce concentration to less than 10%	
Exposure estimate and reference to its source	
Assessment method	EASY TRA v4.1, ECETOC TRA v3.0, worker, modified version, The concentration of the substance has been considered using a linear approach.
	Worker - dermal, long-term - systemic
Exposure estimate	1.0714 mg/kg bw/day
Risk Characterization Ratio (RCR)	0.051265
Assessment method	EASY TRA v4.1, Stoffenmanager v5.6
	Worker - inhalation, long-term - systemic
Exposure estimate	28.52 mg/m³
Risk Characterization Ratio (RCR)	0.390685
Assessment method	EASY TRA v4.1, Stoffenmanager v5.6
	Worker - inhalation, long-term - local
Exposure estimate	28.52 mg/m³
Risk Characterization Ratio (RCR)	0.92
Guidance to Downstream Users	
For scaling see: http://www.ecetoc.org/tra Please note that a modified version has been used (see exposure estimates)	

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