

Safety Data Sheet

according to UK REACH Regulation

Aluminum-iron-hematoxylin

Revision date: 12.03.2024

Product code: 18417.xxxxx

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

1.1. Product identifier

Aluminum-iron-hematoxylin

UFI: S60N-P1NE-V00K-FJC8

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

Use of the substance/mixture

laboratory reagent

Uses advised against

Any non-intended use.

1.3. Details of the supplier of the safety data sheet

Company name: MORPHISTO GmbH
Street: Schumannstr. 142/144
Place: D-63069 Offenbach
Telephone: +49 (0) 69 / 400 3019-60 Telefax: +49 (0) 69 / 400 3019-64
E-mail: info@morphisto.de
Contact person: Morphisto GmbH
E-mail: gefahrstoffmanagement@morphisto.de
Internet: http://www.morphisto.de

1.4. Emergency telephone number:

Poison Information Center Mainz, Germany, Tel: +49(0)6131/19240

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

GB CLP Regulation

Flam. Liq. 3; H226

Eye Irrit. 2; H319

Full text of hazard statements: see SECTION 16.

2.2. Label elements

GB CLP Regulation

Signal word: Warning

Pictograms:



Hazard statements

H226 Flammable liquid and vapour.
H319 Causes serious eye irritation.

Precautionary statements

P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P280 Wear protective gloves/protective clothing/eye protection/face protection.
P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P337+P313 If eye irritation persists: Get medical advice/attention.

Special labelling of certain mixtures

EUH208 Contains Iron(III) chloride. May produce an allergic reaction.

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Labelling of packages where the contents do not exceed 125 ml
Signal word:

Warning

Pictograms:

2.3. Other hazards

This substance/mixture contains no components considered to be either persistent, bioaccumulating and toxic (PBT) or very persistent and very bioaccumulating (vPvB) at levels of 0.1% or higher. Ecological information: The substance/mixture does not contain any components that are considered to be hazardous according to REACH Article 57(f) or Commission Delegated Regulation (EU) 2017/2100 or Commission Delegated Regulation (EU) 2018/605 in amounts of 0.1 % or more have endocrine disrupting properties. Toxicological information: The substance/mixture does not contain any components that are to be classified according to REACH Article 57(f) or Commission Delegated Regulation (EU) 2017/2100 or Commission Delegated Regulation (EU) 2018/605 in quantities of 0.1 % or more have endocrine disrupting properties.

SECTION 3: Composition/information on ingredients
3.2. Mixtures
Relevant ingredients

CAS No	Chemical name			Quantity
	EC No	Index No	REACH No	
	Classification (GB CLP Regulation)			
64-17-5	Ethanol			15 - < 20 %
	200-578-6	603-002-00-5	01-2119457610-43	
	Flam. Liq. 2, Eye Irrit. 2; H225 H319			
10043-01-3	aluminum sulfate			1 - < 5 %
	233-135-0		01-2119531538-36	
	Eye Dam. 1; H318			
7647-01-0	hydrochloric acid %			< 1 %
	231-595-7	017-002-01-X	01-2119484862-27	
	Met. Corr. 1, Skin Corr. 1B, Eye Dam. 1, STOT SE 3; H290 H314 H318 H335			
7705-08-0	Iron(III) chloride			< 1 %
	231-729-4		01-2119497998-05	
	Acute Tox. 4, Skin Irrit. 2, Eye Dam. 1, Skin Sens. 1; H302 H315 H318 H317			
78-93-3	butanone			< 1 %
	201-159-0	606-002-00-3	01-2119457290-43	
	Flam. Liq. 2, Eye Irrit. 2, STOT SE 3; H225 H319 H336 EUH066			

Full text of H and EUH statements: see section 16.

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Specific Conc. Limits, M-factors and ATE

CAS No	EC No	Chemical name	Quantity
		Specific Conc. Limits, M-factors and ATE	
64-17-5	200-578-6	Ethanol	15 - < 20 %
		inhalation: LC50 = 124,7 mg/l (vapours); dermal: LD50 = >2000 mg/kg; oral: LD50 = >5000 mg/kg Eye Irrit. 2; H319: >= 50 - 100	
10043-01-3	233-135-0	aluminum sulfate	1 - < 5 %
		dermal: LD50 = >5000 mg/kg; oral: LD50 = >5000 mg/kg	
7647-01-0	231-595-7	hydrochloric acid %	< 1 %
		oral: LD50 = 2222 mg/kg Skin Corr. 1B; H314: >= 25 - 100 Skin Irrit. 2; H315: >= 10 - < 25 Eye Irrit. 2; H319: >= 10 - < 25 STOT SE 3; H335: >= 10 - 100	
7705-08-0	231-729-4	Iron(III) chloride	< 1 %
		dermal: LD50 = >2000 mg/kg; oral: LD50 = 450 mg/kg	
78-93-3	201-159-0	butanone	< 1 %
		dermal: LD50 = >2000 mg/kg; oral: LD50 = 2054 mg/kg	

Further Information

This product contains no substances of very high concern (SVHC) (>0,1%) which are included in the Candidate List according to Article 59 of REACH.

SECTION 4: First aid measures
4.1. Description of first aid measures
General information

In case of accident or unwellness, seek medical advice immediately (show directions for use or safety data sheet if possible). Take off immediately all contaminated clothing.

After inhalation

Provide fresh air. If breathing is irregular or stopped, administer artificial respiration. Medical treatment necessary. Remove person to fresh air and keep comfortable for breathing. In case of respiratory tract irritation, consult a physician.

After contact with skin

After contact with skin, wash immediately with plenty of water and soap. Take off immediately all contaminated clothing and wash it before reuse. If skin irritation occurs: Get medical advice/attention.

After contact with eyes

After contact with the eyes, rinse with water with the eyelids open for a sufficient length of time, then consult an ophthalmologist immediately. Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.

After ingestion

Observe risk of aspiration if vomiting occurs. Rinse mouth thoroughly with water. Let water be drunken in little sips (dilution effect). Do NOT induce vomiting. Never give anything by mouth to an unconscious person or a person with cramps. In all cases of doubt, or when symptoms persist, seek medical advice.

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

No information available.

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

Treat symptomatically.

SECTION 5: Firefighting measures
5.1. Extinguishing media
Suitable extinguishing media

Water spray jet, Carbon dioxide (CO₂), Foam, Extinguishing powder.

In case of major fire and large quantities: Atomized water.

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Unsuitable extinguishing media

High power water jet.

5.2. Special hazards arising from the substance or mixtureFlammable. Vapours can form explosive mixtures with air. In case of fire may be liberated: Gas/vapours, irritant. Carbon monoxide Carbon dioxide (CO₂).**5.3. Advice for firefighters**

In case of fire: Wear self-contained breathing apparatus. In case of fire and/or explosion do not breathe fumes.

Additional information

Use water spray jet to protect personnel and to cool endangered containers. Suppress gases/vapours/mists with water spray jet. Collect contaminated fire extinguishing water separately. Do not allow entering drains or surface water. In case of major fire and large quantities: Evacuate area. Fight fire remotely due to the risk of explosion.

SECTION 6: Accidental release measures**6.1. Personal precautions, protective equipment and emergency procedures****General advice**

Remove all sources of ignition. Provide adequate ventilation. Do not breathe gas/fumes/vapour/spray. Avoid contact with skin, eyes and clothes. Use personal protection equipment. Ventilate affected area.

6.2. Environmental precautions

Do not allow uncontrolled discharge of product into the environment. Do not allow to enter into surface water or drains. Cover drains. Prevent spread over a wide area (e.g. by containment or oil barriers). In case of gas escape or of entry into waterways, soil or drains, inform the responsible authorities.

6.3. Methods and material for containment and cleaning up**For cleaning up**

Absorb with liquid-binding material (sand, diatomaceous earth, acid- or universal binding agents). Treat the recovered material as prescribed in the section on waste disposal.

Other information

Ventilate affected area.

Clean contaminated objects and areas thoroughly observing environmental regulations.

6.4. Reference to other sections

Safe handling: see section 7

Personal protection equipment: see section 8

Disposal: see section 13

SECTION 7: Handling and storage**7.1. Precautions for safe handling****Advice on safe handling**

Provide adequate ventilation as well as local exhaust at critical locations.

Wear suitable protective clothing. (See section 8.)

Advice on protection against fire and explosion

Keep away from sources of ignition - No smoking. Take precautionary measures against static discharges.

Vapours can form explosive mixtures with air. Flammable vapours can accumulate in head space of closed systems. Heating causes rise in pressure with risk of bursting.

Advice on general occupational hygiene

Remove contaminated, saturated clothing immediately. Draw up and observe skin protection programme.

Wash hands and face before breaks and after work and take a shower if necessary. When using do not eat, drink, smoke, sniff. The usual precautions for handling chemicals should be considered.

Always close containers tightly after the removal of product.

Further information on handling

General protection and hygiene measures: See section 8.

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7.2. Conditions for safe storage, including any incompatibilities

Requirements for storage rooms and vessels

Keep container tightly closed. Keep in a cool, well-ventilated place. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Protect from direct sunlight.
 Ensure adequate ventilation of the storage area.
 Make sure spills can be contained (e.g. sump pallets or kerbed areas).

Hints on joint storage

Do not store together with: Oxidizing agent. Pyrophoric or self-heating substances. Do not store together with: Gas. Explosives. Flammable solids. Pyrophoric liquids and solids. Self-heating substances and mixtures. Substances or mixtures which, in contact with water, emit flammable gases. Oxidizing liquids. Oxidizing solids. ammonium nitrate. Self-reactive substances and mixtures. Organic peroxides. Non-combustible toxic substances. Radioactive substances. Infectious substances.

Further information on storage conditions

Keep the packing dry and well sealed to prevent contamination and absorption of humidity.
 Protect against: UV-radiation/sunlight. heat. Humidity frost.
 storage temperature: 15-25°C

7.3. Specific end use(s)

See section 1.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Exposure limits (EH40)

CAS No	Substance	ppm	mg/m ³	fibres/ml	Category	Origin
78-93-3	Butan-2-one (methyl ethyl ketone)	200	600		TWA (8 h)	WEL
		300	899		STEL (15 min)	WEL
64-17-5	Ethanol	1000	1920		TWA (8 h)	WEL
7647-01-0	Hydrogen chloride (gas and aerosol mists)	1	2		TWA (8 h)	WEL
		5	8		STEL (15 min)	WEL

Biological Monitoring Guidance Values (EH40)

CAS No	Substance	Parameter	Value	Test material	Sampling time
78-93-3	Butan-2-one	butan-2-one	70 µmol/L	urine	Post shift

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DNEL/DMEL values

CAS No	Substance	Exposure route	Effect	Value
64-17-5	Ethanol			
Worker DNEL, acute		inhalation	local	1900 mg/m ³
Worker DNEL, long-term		dermal	systemic	343 mg/kg bw/day
Worker DNEL, long-term		inhalation	systemic	950 mg/m ³
Consumer DNEL, acute		inhalation	local	950 mg/m ³
Consumer DNEL, long-term		dermal	systemic	206 mg/kg bw/day
Consumer DNEL, long-term		inhalation	systemic	114 mg/m ³
Consumer DNEL, long-term		oral	systemic	87 mg/kg bw/day
7647-01-0	hydrochloric acid %			
Worker DNEL, acute		inhalation	local	15 mg/m ³
Worker DNEL, long-term		inhalation	local	8 mg/m ³
7705-08-0	Iron(III) chloride			
Worker DNEL, long-term		dermal	systemic	2,8 mg/kg bw/day
78-93-3	butanone			
Worker DNEL, long-term		inhalation	systemic	600 mg/m ³
Worker DNEL, long-term		dermal	systemic	1161 mg/kg bw/day

PNEC values

CAS No	Substance	Value
64-17-5	Ethanol	
Freshwater		0,96 mg/l
Freshwater (intermittent releases)		2,75 mg/l
Marine water		0,79 mg/l
Marine water (intermittent releases)		2,75 mg/l
Freshwater sediment		3,6 mg/kg
Marine sediment		2,9 mg/kg
Secondary poisoning		0,72 mg/kg
Micro-organisms in sewage treatment plants (STP)		580 mg/l
Soil		0,63 mg/kg
78-93-3	butanone	
Freshwater		55,8 mg/l
Freshwater (intermittent releases)		55,8 mg/l
Marine water		55,8 mg/l
Freshwater sediment		284,7 mg/kg
Marine sediment		284,7 mg/kg
Micro-organisms in sewage treatment plants (STP)		709 mg/l
Soil		22,5 mg/kg

8.2. Exposure controls

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Appropriate engineering controls

Provide adequate ventilation as well as local exhaust at critical locations.

Individual protection measures, such as personal protective equipment

Eye/face protection

Suitable eye protection: goggles. Wear safety glasses; chemical goggles (if splashing is possible). EN 166

Hand protection

When handling with chemical substances, protective gloves must be worn with the CE-label including the four control digits. The quality of the protective gloves resistant to chemicals must be chosen as a function of the specific working place concentration and quantity of hazardous substances. For special purposes, it is recommended to check the resistance to chemicals of the protective gloves mentioned above together with the supplier of these gloves. In case of prolonged or frequently repeated skin contact: Wear suitable gloves. (DIN EN 374)

Suitable material: Butyl rubber.

Thickness of glove material: 0,5 mm

Breakthrough time \geq 480 min. penetration time (maximum wearing period): ~ 120 min. (estimated)

In the case of wanting to use the gloves again, clean them before taking off and air them well. Before using check leak tightness / impermeability.

For special purposes, it is recommended to check the resistance to chemicals of the protective gloves mentioned above together with the supplier of these gloves.

Skin protection

Use of protective clothing. Wear suitable protective clothing.

Minimum standard for preventive measures while handling with working materials are specified in the TRGS 500 (D).

Respiratory protection

In case of inadequate ventilation wear respiratory protection. With correct and proper use, and under normal conditions, breathing protection is not required.

Respiratory protection necessary at:

Generation/formation of aerosols exceeding exposure limit values

Insufficient ventilation.

Suitable respiratory protective equipment: Combination filtering device (EN 14387) Type: A/P1-3

The filter class must be suitable for the maximum contaminant concentration (gas/vapour/aerosol/particulates) that may arise when handling the product. If the concentration is exceeded, self-contained breathing apparatus must be used. The wearing time limitations according to GefStoffV in conjunction with the rules for the use of respiratory protective devices (BGR 190) must be observed.

Environmental exposure controls

Do not allow uncontrolled discharge of product into the environment.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state:	liquid.	
Colour:	red violet	
Odour:	characteristic	
Melting point/freezing point:		not applicable
Boiling point or initial boiling point and boiling range:		not determined
Flammability:		not applicable

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Lower explosion limits:	not determined
Upper explosion limits:	not determined
Flash point:	42 °C
Auto-ignition temperature:	not determined
Decomposition temperature:	not determined
pH-Value (at 20 °C):	2-3
Viscosity / kinematic: (at 20 °C)	not determined
Water solubility: (at 20 °C)	miscible.
Solubility in other solvents	not determined
Partition coefficient n-octanol/water:	not determined
Vapour pressure: (at 20 °C)	not determined
Density (at 20 °C):	not determined
Relative vapour density:	not determined
Particle characteristics:	not applicable

9.2. Other information**Information with regard to physical hazard classes**

Explosive properties

The product is not: Explosive. none.

Oxidizing properties

none.

Other safety characteristics

Evaporation rate:	not determined
Solvent separation test:	not determined
Solvent content:	not determined
Solid content:	not determined
Viscosity / dynamic: (at 40 °C)	not determined

SECTION 10: Stability and reactivity**10.1. Reactivity**

No information available.

10.2. Chemical stability

The product is stable under normal storage conditions.

10.3. Possibility of hazardous reactions

see section 10.5

10.4. Conditions to avoid

Keep away from sources of heat (e.g. hot surfaces), sparks and open flames. Vapours can form explosive mixtures with air. Protect against: UV-radiation/sunlight. heat. moisture.

In use may form flammable/explosive vapour-air mixture.

Heating causes rise in pressure with risk of bursting.

10.5. Incompatible materials

Materials to avoid: Oxidizing agents, strong. Reducing agents, strong. Strong acid. strong alkalis.

10.6. Hazardous decomposition productsIn case of fire may be liberated: Gas/vapours, irritant. Carbon monoxide Carbon dioxide (CO₂).**SECTION 11: Toxicological information**

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11.1. Information on hazard classes as defined in GB CLP Regulation

Acute toxicity

Based on available data, the classification criteria are not met.

ATEmix calculated

ATE (oral) > 2000 mg/kg; ATE (dermal) > 2000 mg/kg; ATE (inhalation vapour) > 20 mg/l; ATE (inhalation dust/mist) > 5 mg/l

CAS No	Chemical name				
	Exposure route	Dose	Species	Source	Method
64-17-5	Ethanol				
	oral	LD50 >5000 mg/kg	Rat	ECHA Dossier	
	dermal	LD50 >2000 mg/kg	Rabbit	ECHA Dossier	
	inhalation (4 h) vapour	LC50 124,7 mg/l	Rat	ECHA Dossier	
10043-01-3	aluminum sulfate				
	oral	LD50 >5000 mg/kg	Rat	suppliers SDS.	
	dermal	LD50 >5000 mg/kg	Rabbit	suppliers SDS.	
7647-01-0	hydrochloric acid %				
	oral	LD50 2222 mg/kg	Rat	suppliers SDS.	
7705-08-0	Iron(III) chloride				
	oral	LD50 450 mg/kg	Rat	Gestis	
	dermal	LD50 >2000 mg/kg	Rabbit	Gestis	
78-93-3	butanone				
	oral	LD50 2054 mg/kg	Ratte	SDB Lieferant	
	dermal	LD50 >2000 mg/kg	Rabbit	ECHA Dossier	

Irritation and corrosivity

Causes serious eye irritation.

Skin corrosion/irritation: Based on available data, the classification criteria are not met.

Sensitising effects

Based on available data, the classification criteria are not met.

Contains Iron(III) chloride. May produce an allergic reaction.

Carcinogenic/mutagenic/toxic effects for reproduction

Based on available data, the classification criteria are not met.

STOT-single exposure

Based on available data, the classification criteria are not met.

STOT-repeated exposure

Based on available data, the classification criteria are not met.

Aspiration hazard

Based on available data, the classification criteria are not met.

11.2. Information on other hazards

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Endocrine disrupting properties

This product does not contain any substance that has endocrine disrupting properties in humans as no ingredient meets the criteria.

Other information

The mixture is classified as hazardous according to regulation (EC) No 1272/2008 [CLP].

Further information

Solvent:

Symptoms: Depression of the central nervous system. Liver and kidney damage. drowsiness. vomiting.

Nausea. Dizziness. unconsciousness. Impaired consciousness. Intoxication. erythema (redness)

SECTION 12: Ecological information

12.1. Toxicity

Based on available data, the classification criteria are not met.

CAS No	Chemical name					
	Aquatic toxicity	Dose	[h] [d]	Species	Source	Method
64-17-5	Ethanol					
	Acute fish toxicity	LC50 14200 mg/l	96 h	Pimephales promelas (fathead minnow)	ECHA Dossier	
	Acute algae toxicity	ErC50 275 mg/l	72 h	Chlorella vulgaris	ECHA Dossier	
	Acute crustacea toxicity	EC50 5012 mg/l	48 h	Ceriodaphnia dubia (water flea)	ECHA Dossier	
	Crustacea toxicity	NOEC 9,6 mg/l	9 d	Daphnia magna	ECHA Dossier	
10043-01-3	aluminum sulfate					
	Acute fish toxicity	LC50 >1000 mg/l	96 h	Danio rerio (zebrafish)	suppliers SDS.	
	Acute crustacea toxicity	EC50 >160 mg/l	48 h	Daphnia magna	suppliers SDS.	
7705-08-0	Iron(III) chloride					
	Acute fish toxicity	LC50 20,95-22,56 mg/l	96 h	Pimephales promelas (fathead minnow)	suppliers SDS.	
	Acute crustacea toxicity	EC50 27,9 mg/l	48 h	Daphnia magna (Big water flea)	suppliers SDS.	
78-93-3	butanone					
	Acute fish toxicity	LC50 2993 mg/l	96 h	Pimephales promelas	ECHA Dossier	OECD 203
	Acute algae toxicity	ErC50 1972 mg/l	72 h	Pseudokirchnerella subcapitata	ECHA Dossier	OECD 201
	Acute crustacea toxicity	EC50 308 mg/l	48 h	Daphnia magna	ECHA Dossier	OECD 202

12.2. Persistence and degradability

The product has not been tested.

CAS No	Chemical name			
	Method	Value	d	Source
	Evaluation			
64-17-5	Ethanol			
	other guideline	84%	20	ECHA Dossier
	Biodegradable.			
78-93-3	butanone			
		98%	28	ECHA Dossier
	Readily biodegradable (according to OECD criteria).			

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12.3. Bioaccumulative potential

The product has not been tested.

Partition coefficient n-octanol/water

CAS No	Chemical name	Log Pow
64-17-5	Ethanol	-0,31
7705-08-0	Iron(III) chloride	-4
78-93-3	butanone	0,3

BCF

CAS No	Chemical name	BCF	Species	Source
7705-08-0	Iron(III) chloride	2756-9622		

12.4. Mobility in soil

The product has not been tested.

12.5. Results of PBT and vPvB assessment

The substances in the mixture do not meet the PBT/vPvB criteria according to UK REACH.

12.6. Endocrine disrupting properties

This product does not contain a substance that has endocrine disrupting properties with respect to non-target organisms as no components meets the criteria.

12.7. Other adverse effects

The product has not been tested.

Further information

Avoid release to the environment. Do not allow to enter into surface water or drains.

SECTION 13: Disposal considerations**13.1. Waste treatment methods****Disposal recommendations**

Do not allow to enter into surface water or drains. Dispose of waste according to applicable legislation. Consult the local waste disposal expert about waste disposal. Non-contaminated packages may be recycled. According to (EWC) European Waste Catalogue, allocation of waste identity numbers/waste descriptions must be carried out in a specific way for every industry and process.

Control report for waste code/ waste marking according to (EWC) European Waste Catalogue:

List of Wastes Code - residues/unused products

160506 WASTES NOT OTHERWISE SPECIFIED IN THE LIST; gases in pressure containers and discarded chemicals; laboratory chemicals, consisting of or containing hazardous substances, including mixtures of laboratory chemicals; hazardous waste

List of Wastes Code - used product

160506 WASTES NOT OTHERWISE SPECIFIED IN THE LIST; gases in pressure containers and discarded chemicals; laboratory chemicals, consisting of or containing hazardous substances, including mixtures of laboratory chemicals; hazardous waste

List of Wastes Code - contaminated packaging

150110 WASTE PACKAGING; ABSORBENTS, WIPING CLOTHS, FILTER MATERIALS AND PROTECTIVE CLOTHING NOT OTHERWISE SPECIFIED; packaging (including separately collected municipal packaging waste); packaging containing residues of or contaminated by hazardous substances; hazardous waste

Contaminated packaging

Wash with plenty of water. Completely emptied packages can be recycled. Handle contaminated packages in the same way as the substance itself.

SECTION 14: Transport information

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Land transport (ADR/RID)

14.1. UN number or ID number:	No dangerous good in sense of this transport regulation.
14.2. UN proper shipping name:	No dangerous good in sense of this transport regulation.
14.3. Transport hazard class(es):	No dangerous good in sense of this transport regulation.
14.4. Packing group:	No dangerous good in sense of this transport regulation.

Inland waterways transport (ADN)

14.1. UN number or ID number:	No dangerous good in sense of this transport regulation.
14.2. UN proper shipping name:	No dangerous good in sense of this transport regulation.
14.3. Transport hazard class(es):	No dangerous good in sense of this transport regulation.
14.4. Packing group:	No dangerous good in sense of this transport regulation.

Marine transport (IMDG)

14.1. UN number or ID number:	No dangerous good in sense of this transport regulation.
14.2. UN proper shipping name:	No dangerous good in sense of this transport regulation.
14.3. Transport hazard class(es):	No dangerous good in sense of this transport regulation.
14.4. Packing group:	No dangerous good in sense of this transport regulation.

Air transport (ICAO-TI/IATA-DGR)

14.1. UN number or ID number:	No dangerous good in sense of this transport regulation.
14.2. UN proper shipping name:	No dangerous good in sense of this transport regulation.
14.3. Transport hazard class(es):	No dangerous good in sense of this transport regulation.
14.4. Packing group:	No dangerous good in sense of this transport regulation.

14.5. Environmental hazards

ENVIRONMENTALLY HAZARDOUS: No

14.6. Special precautions for user

See section 8.

14.7. Maritime transport in bulk according to IMO instruments

not relevant.

SECTION 15: Regulatory information
15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture
EU regulatory information

Restrictions on use (REACH, annex XVII):

Entry 3, Entry 40, Entry 75

Directive 2010/75/EU on industrial emissions: not determined

Directive 2004/42/EC on VOC in paints and varnishes: not determined

Information according to Directive 2012/18/EU (SEVESO III): P5c FLAMMABLE LIQUIDS

Additional information

The mixture is classified as hazardous according to regulation (EC) No 1272/2008 [CLP].

National regulatory information

Employment restrictions: Observe restrictions to employment for juveniles according to the 'juvenile work protection guideline' (94/33/EC).

Water hazard class (D): 1 - slightly hazardous to water

15.2. Chemical safety assessment

For the following substances of this mixture a chemical safety assessment has been carried out:

Ethanol

aluminum sulfate

hydrochloric acid %

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Iron(III) chloride
butanone

SECTION 16: Other information

Changes

This data sheet contains changes from the previous version in section(s): 2,3,4,5,6,7,8,9,10,11,12,13,14,15,16.

Rev. 1.0; 24.05.2019; Initial release:

Rev. 2,0; 12.03.2024; general adjustment(s)

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Abbreviations and acronyms

Met. Corr: Corrosive to metals
Flam. Liq: Flammable liquids
Acute Tox: Acute toxicity
Skin Corr: Skin corrosion
Skin Irrit: Skin irritation
Eye Dam: Eye damage
Eye Irrit: Eye irritation
Skin Sens: Skin sensitisation
STOT SE: Specific target organ toxicity - single exposure
ADR: Accord européen sur le transport des marchandises dangereuses par Route
AwSV: Verordnung über Anlagen zum Umgang mit wassergefährdenden Stoffen
AGW: Arbeitsplatzgrenzwert
AVV: Abfallverzeichnisverordnung
CAS Chemical Abstracts Service
CLP: Classification, Labelling and Packaging of substances and mixtures
DNEL: Derived No Effect Level
d: day(s)
EAKV: Europäisches Abfallverzeichnis gemäß Entwurf Abfallverzeichnisverordnung
EINECS: European INventory of Existing Commercial chemical Substances
ELINCS: European List of Notified Chemical Substances
ECHA: European Chemicals Agency
EWC: European Waste Catalogue
IARC: INTERNATIONAL AGENCY FOR RESEARCH ON CANCER
IMDG: International Maritime Code for Dangerous Goods
IATA: International Air Transport Association
IATA-DGR: Dangerous Goods Regulations by the "International Air Transport Association" (IATA)
ICAO: International Civil Aviation Organization
ICAO-TI: Technical Instructions by the "International Civil Aviation Organization" (ICAO)
GHS: Globally Harmonized System of Classification and Labelling of Chemicals
GefStoffV: Gefahrstoffverordnung (Ordinance on Hazardous Substances, Germany)
h: hour
LOAEL: Lowest observed adverse effect level
LOAEC: Lowest observed adverse effect concentration
LC50: Lethal concentration, 50 percent
LD50: Lethal dose, 50 percent
NOAEL: No observed adverse effect level
NOAEC: No observed adverse effect level
NLP: No-Longer Polymers
N/A: not applicable
OECD: Organisation for Economic Co-operation and Development
PNEC: predicted no effect concentration
PBT: Persistent bioaccumulative toxic
RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)
REACH: Registration, Evaluation, Authorisation of Chemicals
SVHC: substance of very high concern
TRGS Technische Regeln fuer Gefahrstoffe
UN: United Nations
VOC: Volatile Organic Compounds
VwVwS: Verwaltungsvorschrift wassergefaehrdender Stoffe
WGK: Wassergefaehrdungsklasse
CLP: Classification, labelling and Packaging
REACH: Registration, Evaluation and Authorization of Chemicals
GHS: Globally Harmonised System of Classification, Labelling and Packaging of Chemicals
UN: United Nations

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EC/EEC: European Community/European Economic Community
 EU: European Union
 CAS: Chemical Abstracts Service
 DNEL: Derived No Effect Level
 DMEL: Derived Minimal Effect Level
 PNEC: Predicted No Effect Concentration
 ATE: Acute toxicity estimate
 LL50: Lethal loading, 50%
 EL50: Effect loading, 50%
 EC50: Effective Concentration 50%
 ErC50: Effective Concentration 50%, growth rate
 NOEC: No Observed Effect Concentration
 BCF: Bio-concentration factor
 PBT: persistent, bioaccumulative, toxic
 vPvB: very persistent, very bioaccumulative
 M-factor: Multiplying factor
 ADR: Accord européen sur le transport des marchandises dangereuses par Route
 (European Agreement concerning the International Carriage of Dangerous Goods by Road)
 RID: Regulations concerning the international carriage of dangerous goods by rail
 ADN: European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways
 (Accord européen relatif au transport international des marchandises dangereuses par voies de navigation
 intérieures)
 EmS: Emergency Schedules
 MFAG: Medical First Aid Guide
 IATA: International Air Transport Association
 DGR: Dangerous Goods Regulations
 ICAO: International Civil Aviation Organization
 TI: Technical Instructions
 MARPOL: International Convention for the Prevention of Marine Pollution from Ships
 IBC: Intermediate Bulk Container
 VOC: volatile organic compound
 For abbreviations and acronyms, see: ECHA Guidance on information requirements and chemical safety
 assessment, chapter R.20 (Table of terms and abbreviations).

Classification for mixtures and used evaluation method according to GB CLP Regulation

Classification	Classification procedure
Flam. Liq. 3; H226	On basis of test data
Eye Irrit. 2; H319	Calculation method

Relevant H and EUH statements (number and full text)

H225	Highly flammable liquid and vapour.
H226	Flammable liquid and vapour.
H290	May be corrosive to metals.
H302	Harmful if swallowed.
H314	Causes severe skin burns and eye damage.
H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H318	Causes serious eye damage.
H319	Causes serious eye irritation.
H335	May cause respiratory irritation.
H336	May cause drowsiness or dizziness.
EUH066	Repeated exposure may cause skin dryness or cracking.
EUH208	Contains Iron(III) chloride. May produce an allergic reaction.

Further Information

The information is based on the present level of our knowledge. It does not, however, give assurance of
 product properties and establishes no contract legal rights. The receiver of our product is singularly responsible

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for adhering to existing laws and regulations. Classification according to Regulation (EC) No 1272/2008 [CLP] -

Classification procedure:

Health hazards: Calculation method.

Environmental hazards: Calculation method.

Physical hazards: On basis of test data and / or calculated and / or estimated.

The above information describes exclusively the safety requirements of the product and is based on our present-day knowledge. The information is intended to give you advice about the safe handling of the product named in this safety data sheet, for storage, processing, transport and disposal. The information cannot be transferred to other products. In the case of mixing the product with other products or in the case of processing, the information on this safety data sheet is not necessarily valid for the new made-up material.

(The data for the relevant ingredients were taken respectively from the last version of the sub-contractor's safety data sheet.)