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

1.1. Product identifier

Ethanol, rein 99,9% (entwässert)

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

Use of the substance/mixture

Use as laboratory reagent.

Uses advised against

Any non-intended use.

1.3. Details of the supplier of the safety data sheet

Company name:	Schmitz-Metallographie GmbH	
Street:	Kaiserstraße 100	
Place:	D-52134 Herzogenrath	
Telephone:	02407 / 568296-0	Telefax: 02407 / 568296-9
E-mail:	info@schmitz-metallographie.de	
Contact person:	Herr Füllmann	
E-mail:	info@schmitz-metallographie.de	
Internet:	www.schmitz-metallographie.de	

1.4. Emergency telephone number:

02407 / 568296-0 (Mo-Fr 9:00 - 16:00)

Further Information

Safety Data Sheet according to Regulation (EC) No. 1907/2006 (amended by Regulation (EU) No 2020/878)

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Regulation (EC) No 1272/2008

Flam. Liq. 2; H225
Eye Irrit. 2; H319

Full text of hazard statements: see SECTION 16.

2.2. Label elements

Regulation (EC) No 1272/2008

Signal word: Danger

Pictograms:

Hazard statements

H225	Highly 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.
P233	Keep container tightly closed.
P280	Wear protective gloves/protective clothing and 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.
P403+P235	Store in a well-ventilated place. Keep cool.

P501 Dispose of contents/container to local/regional/national/international regulations.

2.3. Other hazards

Endocrine disrupting properties: butanone; ethyl methyl ketone.
In case of insufficient ventilation and/or through use, explosive/highly flammable mixtures may develop.
The substances in the mixture (> 0.1%) do not meet the PBT/vPvB criteria according to REACH, annex XIII.

SECTION 3: Composition/information on ingredients

3.2. Mixtures

Relevant ingredients

CAS No	Chemical name			Quantity
	EC No	Index No	REACH No	
	Classification (Regulation (EC) No 1272/2008)			
64-17-5	ethanol; ethyl alcohol			99,9 %
	200-578-6	603-002-00-5	01-2119457610-43	
	Flam. Liq. 2, Eye Irrit. 2; H225 H319			
78-93-3	butanone; ethyl methyl ketone			<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.

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; ethyl alcohol	99,9 %
	inhalation: LC50 = 124,7 mg/l (vapours); oral: LD50 = 10470 mg/kg Eye Irrit. 2; H319: >= 50 - 100		
78-93-3	201-159-0	butanone; ethyl methyl ketone	<1 %
	dermal: LD50 = > 2000 mg/kg; oral: LD50 = 2193 mg/kg		

Further Information

Product does not contain listed SVHC substances > 0.1 % according to Regulation (EC) No. 1907/2006 Article 59 (REACH).

SECTION 4: First aid measures

4.1. Description of first aid measures

General information

Remove affected person from the danger area and lay down. In case of accident or unwellness, seek medical advice immediately (show directions for use or safety data sheet if possible).
Remove contaminated, saturated clothing.

After inhalation

In case of accident by inhalation: remove casualty to fresh air and keep at rest. If unconscious place in recovery position and seek medical advice. In case of allergic symptoms, especially in the breathing area, seek medical advice immediately.

After contact with skin

After contact with skin, wash immediately with plenty of water and soap. In case of skin irritation, seek medical treatment.

After contact with eyes

Rinse immediately carefully and thoroughly with eye-bath or water. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.

After ingestion

Rinse mouth thoroughly with water. Let water be drunken in little sips (dilution effect). Seek medical advice.

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

See sections 2 and 11

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

Carbon dioxide (CO_2). Dry extinguishing powder. Alcohol resistant foam. Atomized water.
In case of major fire and large quantities: Water spray. Alcohol resistant foam.

Unsuitable extinguishing media

High power water jet.

5.2. Special hazards arising from the substance or mixture

In use, may form flammable/explosive vapour-air mixture.
Vapours are heavier than air and will spread at floor level.
Can be released in case of fire: Carbon monoxide (CO). Carbon dioxide (CO_2).

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.
Reignition possible over considerable distance.

Additional information

Use water spray jet to protect personnel and to cool endangered containers. 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

Do not breathe gas/fumes/vapour/spray. Avoid contact with skin, eyes and clothes.

For non-emergency personnel

Remove all sources of ignition. Ventilate affected area.
Special danger of slipping by leaking/spilling product.
Wear personal protection equipment. (refer to section 8)

For emergency responders

No special measures are necessary.

6.2. Environmental precautions

Do not allow to enter into surface water or drains. Due to danger of explosion, prevent leakage of vapours into cellars, flues and ditches. 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 containment

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

For cleaning up

Clear contaminated areas thoroughly.

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

Do not breathe gas/fumes/vapour/spray. Avoid contact with skin, eyes and clothes.
Wear personal protection equipment. (See section 8.)

Advice on protection against fire and explosion

Keep away from sources of ignition. - No smoking. Take precautionary measures against static discharges. Flammable vapours can accumulate in head space of closed systems. In use, may form flammable/explosive vapour-air mixture. Heating causes rise in pressure with risk of bursting.

Advice on general occupational hygiene

Always close containers tightly after the removal of product. When using do not eat, drink or smoke. Wash hands before breaks and after work. Take off contaminated clothing. Protect skin by using skin protective cream.

Further information on handling

General protection and hygiene measures: refer to section 8

7.2. Conditions for safe storage, including any incompatibilities

Requirements for storage rooms and vessels

Keep/Store only in original container. Keep container tightly closed in a cool, well-ventilated place. Protect against direct sunlight.
Ensure adequate ventilation of the storage area. Concentrated vapours are heavier than air.
Suitable material for Container: Stainless steel. (1.4301 (V2), 1.4401 (V4)); iron. solvent resistant plastics.
Unsuitable materials for Container: Aluminium. Rubber. various plastics.

Hints on joint storage

Do not store together with: Gas. Explosives. Flammable solids. Pyrophoric liquids and solids. Self-heating substances and mixtures. Substances and 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

Recommended storage temperature: 5 - 25°C
Protect against: UV-radiation/sunlight. heat. Cold.

7.3. Specific end use(s)

See section 1.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Occupational exposure limits

CAS No	Substance	ppm	mg/m³	fib/cm³	Category	Origin
64-17-5	Ethanol	1000	-		STEL (15 min)	
64-17-5	Ethyl alcohol	1000	-		STEL (15 min)	
67-63-0	Isopropyl alcohol	200	-		TWA (8 h)	
		400	-		STEL (15 min)	
78-93-3	Methyl ethyl ketone (MEK) (Butan-2-one)	200	600		TWA (8 h)	
		300	900		STEL (15 min)	
67-63-0	Propan-2-ol	200	-		TWA (8 h)	

		400	-		STEL (15 min)	

Biological limit values

CAS No	Substance	Parameter	Value	Test material	Sampling time
67-63-0	2-Propanol	Acetone	40 mg/L	Urine	End of shift at end of workweek
78-93-3	Butan-2-one	Butan-2-one	70 µmol/L	Urine	Post shift

DNEL/DMEL values

CAS No	Substance			
DNEL type		Exposure route	Effect	Value
64-17-5	ethanol; ethyl alcohol			
Worker DNEL, long-term		inhalation	systemic	380 mg/m³
Worker DNEL, long-term		dermal	systemic	267-400 mg/kg bw/day
Consumer DNEL, long-term		inhalation	systemic	114 mg/m³
67-63-0	propan-2-ol; isopropyl alcohol; isopropanol			
Worker DNEL, long-term		inhalation	systemic	500 mg/m³
Worker DNEL, long-term		dermal	systemic	888 mg/kg bw/day
Consumer DNEL, long-term		inhalation	systemic	89 mg/m³
Consumer DNEL, long-term		dermal	systemic	319 mg/kg bw/day
Consumer DNEL, long-term		oral	systemic	26 mg/kg bw/day
78-93-3	butanone; ethyl methyl ketone			
Worker DNEL, acute		inhalation	systemic	900 mg/m³
Consumer DNEL, acute		inhalation	systemic	450 mg/m³
Worker DNEL, long-term		dermal	systemic	1161 mg/kg bw/day
Worker DNEL, long-term		inhalation	systemic	600 mg/m³
Consumer DNEL, long-term		inhalation	systemic	106 mg/m³
Consumer DNEL, long-term		dermal	systemic	412 mg/kg bw/day
Consumer DNEL, long-term		oral	systemic	31 mg/kg bw/day

PNEC values

CAS No	Substance	
Environmental compartment		Value
64-17-5	ethanol; ethyl alcohol	
Freshwater		0,96 mg/l
Freshwater (intermittent releases)		2,75 mg/l
Marine water		0,79 mg/l
Freshwater sediment		3,6 mg/kg
Marine sediment		2,9 mg/kg
Secondary poisoning		380 mg/kg
Micro-organisms in sewage treatment plants (STP)		580 mg/l
Soil		0,63 mg/kg

8.2. Exposure controls



Appropriate engineering controls

Technical measures and the application of suitable work processes have priority over personal protection equipment.
Provide adequate ventilation.
If local exhaust ventilation is not possible or not sufficient, the entire working area should be ventilated by technical means.

Individual protection measures, such as personal protective equipment

Eye/face protection

Tightly sealed safety glasses. EN ISO 16321-1:2022

Hand protection

In case of prolonged or frequently repeated skin contact:
Tested protective gloves are to be worn:
Suitable material:
Butyl rubber.
Thickness of glove material: 0,5 mm
Breakthrough time >=480 min, Penetration time (maximum wearing period): 160 min)
FKM (fluororubber).
Thickness of glove material: 0,5 mm
Breakthrough time >=480 min, Penetration time (maximum wearing period): 160 min)
CR (polychloroprenes, Chloroprene rubber).
Thickness of glove material: 0,4 mm,
Breakthrough time >=120 min, Penetration time (maximum wearing period): 40 min)

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.
The selected protective gloves have to satisfy the specifications of EU Directive EC/2016/425 and the standard EN 374 derived from it.
Before using check leak tightness / impermeability. In the case of wanting to use the gloves again, clean them before taking off and air them well.

Skin protection

Protective clothing. (fire retardant.)

Respiratory protection

With correct and proper use, and under normal conditions, breathing protection is not required.
Respiratory protection necessary at:
Insufficient ventilation
Exceeding exposure limit values
Generation/formation of aerosols
Suitable respiratory protective equipment:
gas filtering equipment (EN 14387). type: A
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.

Environmental exposure controls

Do not allow to enter into surface water or drains.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state:	liquid

Colour:	colourless	
Odour:	alcoholic	
Odour threshold:	not determined	
Melting point/freezing point:		Ethanol: -114 °C
Boiling point or initial boiling point and boiling range:		Ethanol: 78 °C
Flammability:		not determined
Lower explosion limits:		3,3 vol. %
Upper explosion limits:		19 vol. %
Flash point:		12 °C
Auto-ignition temperature:		not determined
Decomposition temperature:		not determined
pH-Value:		not determined
Viscosity / kinematic:		not determined
Water solubility:		completely miscible

Solubility in other solvents

not determined

Dissolution rate:	not relevant
Partition coefficient n-octanol/water:	SECTION 12: Ecological information
Dispersion stability:	not relevant
Vapour pressure: (at 20 °C)	59 hPa
Vapour pressure: (at 50 °C)	280 hPa
Density (at 20 °C):	0,79 g/cm³
Bulk density:	not relevant
Relative vapour density:	not determined
Particle characteristics:	not relevant

9.2. Other information

Information with regard to physical hazard classes

Explosive properties

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

Self-ignition temperature

Gas: not determined

Oxidizing properties

none

Other safety characteristics

Evaporation rate:	not determined
Solvent separation test:	not determined
Solvent content:	100%
Solid content:	not determined
Sublimation point:	not relevant
Softening point:	not relevant
Pour point:	not determined
Viscosity / dynamic:	not determined
Flow time:	not determined

Further Information

No information available.

SECTION 10: Stability and reactivity

10.1. Reactivity

No information available.

10.2. Chemical stability

The product is stable under storage at normal ambient temperatures.

10.3. Possibility of hazardous reactions

Explosion risk in contact with: Oxidizing agents, strong. nitric acid. Hydrogenium peroxide.
Exothermic reactions with: Alkali metals. Alkaline earth metals. Reducing agents, strong.

10.4. Conditions to avoid

Keep away from heat. Protect against direct sunlight. Protect from moisture.
In use may form flammable/explosive vapour-air mixture.
Heating causes rise in pressure with risk of bursting. Recommended storage temperature: < 40 °C

10.5. Incompatible materials

Strong acid. Oxidizing agents. Alkali metals. Alkaline earth metals. Peroxides. phosphorus oxides. Nitrogen oxides (NOx). Hydrogenium peroxide. Nitric acid. hydrochloric acid. Sulfuric acid. Perchlorates. Chromium oxides. Acid chlorides.

10.6. Hazardous decomposition products

Does not decompose when used for intended uses.

SECTION 11: Toxicological information

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

Toxicocinetics, metabolism and distribution

Adsorption
Ethanol has a low molecular weight and has a good water and fat solubility. Therefor it can be adsorbed well in the entire gastrointestinal tract, lungs and the skin. After swallowing approximately 90% is taken up via the gastrointestinal tract. When inhaled, this value is 61%. Because of the rapid evaporation of ethanol the dermal adsorption is very limited; theoretically 21% can be accommodated, however, the absorption rate of uncovered skin is only 1 to 2%.

Distribution:
Regardless of the exposure pathway ethanol is distributed via the bloodstream throughout the body, comparable to the distribution of water. Highly perfused organs (brain, lung and liver) are passed quickly. An equal distribution between tissue and blood is reached after 1 to 1.5 h.

metabolism:
Even before the absorption a small proportion of ethanol is enzymatically metabolized in the stomach (alcohol dehydrogenase). After absorption ethanol is preferably metabolized in the liver (92-95%) and partly in the kidneys and lungs. Metabolism occurs usually in three steps: 1. oxidation of ethanol to acetaldehyde; 2. oxidation of acetaldehyde to acetate; 3. oxidation of acetate to carbon dioxide and water

elimination:
The vast majority of ethanol is eliminated by metabolism, the excretion via breath, urine and sweat plays a minor role. The maximum elimination of ethanol is estimated on the 127 mg / kgbw / h.

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; ethyl alcohol				

	oral	LD50 mg/kg	10470	Rat	ECHA Dossier	OECD Guideline 401
	inhalation (4 h) vapour	LC50 mg/l	124,7	Rat	ECHA Dossier	OECD Guideline 403
78-93-3	butanone; ethyl methyl ketone					
	oral	LD50 mg/kg	2193	Rat	REACh Registration Dossier	
	dermal	LD50 mg/kg	> 2000	Rabbit	ECHA Dossier	

Irritation and corrosivity

Serious eye damage/eye irritation: 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.

Carcinogenic/mutagenic/toxic effects for reproduction

Germ cell mutagenicity: Based on available data, the classification criteria are not met.
Carcinogenicity: Based on available data, the classification criteria are not met.
Reproductive toxicity: Based on available data, the classification criteria are not met.

Ethanol. (CAS-No.: 64-17-5):
In-vitro mutagenicity: No experimental indications of mutagenicity in-vitro exist.
Reproductive toxicity: Exposure time: 18 weeks; Species: CD-1 Mouse. Method: OECD Guideline 416; Result: NOAEL = 20700 mg/kg/day. Developmental toxicity/teratogenicity: Exposure time: 19d; Species: Sprague-Dawley Rat. Method: OECD Guideline 414; Result: NOAEL = 16000 ppm (maternal toxicity), Result: NOAEL >= 20000 ppm (teratogenicity); Literature information: ECHA Dossier

butanone; ethyl methyl ketone (CAS-No.: 78-93-3):
In-vitro mutagenicity: Method: OECD Guideline 471 (Bacterial Reverse Mutation Assay); Result: negative.; Literature information: ECHA Dossier; Reproductive toxicity: (read-across); Method: OECD Guideline 416 (Two-Generation Reproduction Toxicity Study); Species: Rat.; Results: NOAEL = 1644 mg/kg; Literature information: ECHA Dossier; Developmental toxicity/teratogenicity: Method: OECD Guideline 414 (Prenatal Developmental Toxicity Study); Species: Rat.; Results: NOAEC = 1002 ppm; Literature information: ECHA Dossier

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.

Ethanol. (CAS-No.: 64-17-5):
Subchronic oral toxicity: Exposure time: 90d; Species: Sprague-Dawley Rat. Method: OECD Guideline 408; Result: NOAEL = 1280 mg/kg; Literature information: ECHA Dossier

butanone; ethyl methyl ketone (CAS-No.: 78-93-3):
Subchronic inhalation toxicity: Method: OECD Guideline 413 (Subchronic Inhalation Toxicity: 90-Day); Species: Rat. ; Exposure duration: 90 d. Result: NOAEC = 5014 ppm ; Literature information: ECHA Dossier

Aspiration hazard

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

Specific effects in experiment on an animal

No data available

11.2. Information on other hazards

Endocrine disrupting properties

Endocrine disrupting properties: butanone; ethyl methyl ketone.

Other information

No data available.

SECTION 12: Ecological information

12.1. Toxicity

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

Ethanol (CAS-No.: 64-17-5):

Acute plant toxicity: EC50 (6d) = 11800 mg/l (Allium cepa, non-guideline study)

CAS No	Chemical name					
	Aquatic toxicity	Dose	[h] | [d]	Species	Source	Method
64-17-5	ethanol; ethyl alcohol					
	Acute fish toxicity	LC50 15400 mg/l	96 h	Lepomis macrochirus	ECHA Dossier	EPA-660/3-75-009, 1975
	Acute algae toxicity	ErC50 ca. 22000 mg/l	96 h	Raphidocelis subcapitata	ECHA Dossier	OECD Guideline 201
	Acute crustacea toxicity	EC50 > 10000 mg/l	48 h	Daphnia magna	ECHA Dossier	DIN 38412 / part 11
78-93-3	butanone; ethyl methyl ketone					
	Acute fish toxicity	LC50 2973 mg/l	96 h	Pimephales promelas	REACh Registration Dossier	OECD Guideline 203
	Acute algae toxicity	ErC50 1220 mg/l	72 h	Raphidocelis subcapitata (previous names: Pseudoki	REACh Registration Dossier	OECD Guideline 201
	Acute crustacea toxicity	EC50 308 mg/l	48 h	Daphnia magna	REACh Registration Dossier	OECD Guideline 202
	Fish toxicity	NOEC > 1000 mg/l	28 d	Danio rerio (previous name: Brachydanio rerio)	REACh Registration Dossier	other: REACH Guidance on QSARs R.6
	Crustacea toxicity	NOEC > 1000 mg/l	28 d	Daphnia magna	REACh Registration Dossier	other: REACH Guidance on QSARs R.6
	Acute bacteria toxicity	EC50 1150 mg/l ( )		Pseudomonas putida (16h)	ECHA Dossier	

12.2. Persistence and degradability

Ethanol (CAS-No.: 64-17-5):

Chemical Oxygen Demand (COD): CSB = 1900 mg/g

Biochemical oxygen demand (BOD): BSB5 = 1000 mg/g

Abiotic degradation in water: Hydrolysis t 1/2 (20°C, pH 7) = > 1 - < 36 a.

Abiotic degradation in Air t 1/2 (Air.) = 38 d; 1/2 (Air. 100 ppm NO2) = 11,5 h

CAS No	Chemical name			
	Method	Value	d	Source
	Evaluation			
64-17-5	ethanol; ethyl alcohol			
	BOD method, 1971	84 %	20	ECHA Dossier
	Readily biodegradable			
78-93-3	butanone; ethyl methyl ketone			
	OECD 301D/ EEC 92/69/V, C.4-E	98 %	28	ECHA Dossier
	Readily biodegradable (according to OECD criteria).			

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; ethyl alcohol	- 0,77
78-93-3	butanone; ethyl methyl ketone	0,3

BCF

CAS No	Chemical name	BCF	Species	Source
64-17-5	ethanol; ethyl alcohol	1	Cyprinus carpio	ECHA Dossier

12.4. Mobility in soil

No data available

12.5. Results of PBT and vPvB assessment

The substances in the mixture do not meet the PBT/vPvB criteria according to REACH, annex XIII.
The aforementioned statement applies to substances contained in the product with a minimum content of 0.1%.

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.
The aforementioned statement applies to substances contained in the product with a minimum content of 0.1%.

12.7. Other adverse effects

No data available

Further information

Do not allow to enter into surface water or drains.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Disposal recommendations

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

Handle contaminated packages in the same way as the substance itself.

SECTION 14: Transport information

Land transport (ADR/RID)

14.1. UN number or ID number:	UN 1170
14.2. UN proper shipping name:	ETHANOL (ETHYL ALCOHOL)
14.3. Transport hazard class(es):	3
14.4. Packing group:	II
Hazard label:	3

Classification code:	F1
Special Provisions:	144 601
Limited quantity:	1 L
Excepted quantity:	E2
Transport category:	2
Hazard No:	33
Tunnel restriction code:	D/E

Inland waterways transport (ADN)

14.1. UN number or ID number:	UN 1170
14.2. UN proper shipping name:	ETHANOL (ETHYL ALCOHOL)
14.3. Transport hazard class(es):	3
14.4. Packing group:	II
Hazard label:	3

Classification code:	F1
Special Provisions:	144 601
Limited quantity:	1 L
Excepted quantity:	E2

Marine transport (IMDG)

14.1. UN number or ID number:	UN 1170
14.2. UN proper shipping name:	ETHANOL (ETHYL ALCOHOL)
14.3. Transport hazard class(es):	3
14.4. Packing group:	II
Hazard label:	3

Marine pollutant:	YES
Special Provisions:	144
Limited quantity:	1 L
Excepted quantity:	E2
EmS:	F-E, S-D

Air transport (ICAO-TI/IATA-DGR)

14.1. UN number or ID number:	UN 1170
14.2. UN proper shipping name:	ETHYL ALCOHOL
14.3. Transport hazard class(es):	3
14.4. Packing group:	II
Hazard label:	3

Special Provisions:	A3 A58 A180	
Limited quantity Passenger:	1 L	
Passenger LQ:	Y341	
Excepted quantity:	E2	
IATA-packing instructions - Passenger:		353
IATA-max. quantity - Passenger:		5 L
IATA-packing instructions - Cargo:		364
IATA-max. quantity - Cargo:		60 L

14.5. Environmental hazards

ENVIRONMENTALLY HAZARDOUS: No

14.6. Special precautions for user

refer to section 6 - 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:	100% (calculated.)
Directive 2004/42/EC on VOC in paints and varnishes:	790 g/l (calculated.)
Information according to Directive 2012/18/EU (SEVESO III):	P5c FLAMMABLE LIQUIDS

Additional information

Safety Data Sheet according to Regulation (EC) No. 1907/2006 (amended by Regulation (EU) No 2020/878)
The mixture is classified as hazardous according to regulation (EC) No 1272/2008 [CLP].
REACH 1907/2006 Appendix XVII, No (mixture): 3, 40

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; ethyl alcohol
butanone; ethyl methyl ketone

SECTION 16: Other information

Changes

09.10.2012 Rev.1,0, Neuerstellung
13.02.2015 Rev. 1,1, Änderungen in Kapitel: 2, 3, 4, 6, 8 - 16
06.03.2020 Rev. 2,0, Änderungen in Kapitel: 1 - 16.
31.05.2023 Rev. 3,0; Changes in section: 1 - 16.
26.01.2026 Rev. 4,0; Changes in section: 2, 3, 8, 9, 16.

Abbreviations and acronyms

Flam. Liq. 2: Flammable liquids, hazard category 2
Eye Irrit. 2: Eye irritation, hazard category 2
STOT SE 3: Specific target organ toxicity - single exposure, hazard category 3
ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
CAS: Chemical Abstracts Service
CLP: Classification, Labelling and Packaging of substances and mixtures
DNEL: Derived No Effect Level
d: day(s)
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 concentration
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 für Gefahrstoffe
UN: United Nations
VOC: Volatile Organic Compounds
WGK: Water Hazard Class (Germany)

Classification for mixtures and used evaluation method according to Regulation (EC) No 1272/2008 [CLP]

Classification	Classification procedure
Flam. Liq. 2; H225	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.
H319	Causes serious eye irritation.
H336	May cause drowsiness or dizziness.
EUH066	Repeated exposure may cause skin dryness or cracking.

Further Information

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.)