

Safety data sheet

according to 1907/2006/EC, Article 31

Printing date 13.06.2022

Version number 14.0

Revision: 13.06.2022

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

1.1 Product identifier

• **Trade name:** Ethanol absolute, molecular biology grade

• **Article number:** ET0011

• **CAS Number:**

64-17-5

• **EC number:**

200-578-6

• **Index number:**

603-002-00-5

• **Registration number** 01-2119457610-43-XXXX

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

Sector of Use

SU3 Industrial uses: Uses of substances as such or in preparations at industrial sites

SU21 Consumer uses: Private households / general public / consumers

SU22 Professional uses: Public domain (administration, education, entertainment, services, craftsmen)

• **Product category** PC21 Laboratory chemicals

Process category

PROC1 Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions.

PROC2 Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions

PROC3 Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition

PROC4 Chemical production where opportunity for exposure arises

PROC5 Mixing or blending in batch processes

PROC7 Industrial spraying

PROC8a Transfer of substance or mixture (charging and discharging) at non-dedicated facilities

PROC10 Roller application or brushing

PROC13 Treatment of articles by dipping and pouring

PROC15 Use as laboratory reagent

Environmental release category

ERC4 Use of non-reactive processing aid at industrial site (no inclusion into or onto article)

ERC8a Widespread use of non-reactive processing aid (no inclusion into or onto article, indoor)

ERC8d Widespread use of non-reactive processing aid (no inclusion into or onto article, outdoor)

• **Article category** AC30 Other articles with intended release of substances

• **Application of the substance / the preparation:** Laboratory reagent

1.3 Details of the supplier of the safety data sheet

Manufacturer/Supplier:

Scharlab, S.L.

C/Gato Pérez, 33. Pol.Ind. Mas d'en Cisa

08181 Sentmenat (Barcelona) SPAIN

Tel: (+34) 93 745 64 00 - FAX: (+34) 93 715 27 65

email: scharlab@scharlab.com

Internet Web Site: www.scharlab.com

Regional representation:

Scharlab, S.L.

C/Gato Pérez, 33. Pol.Ind. Mas d'en Cisa

08181 Sentmenat (Barcelona) SPAIN

Tel: (+34) 93 745 64 00 - FAX: (+34) 93 715 27 65

email: scharlab@scharlab.com

Internet Web Site: www.scharlab.com

• **Further information obtainable from:** technical department

(Contd. on page 2)

Safety data sheet
according to 1907/2006/EC, Article 31

Printing date 13.06.2022

Version number 14.0

Revision: 13.06.2022

Trade name: Ethanol absolute, molecular biology grade

(Contd. of page 1)

1.4 Emergency telephone number:

Please contact the regional Scharlab distributor/dealer in your country
During normal opening times: Scharlab, S.L. (+34) 93 715 18 11

SECTION 2: Hazards identification**2.1 Classification of the substance or mixture****Classification according to Regulation (EC) No 1272/2008**

GHS02 flame

Flam. Liq. 2 H225 Highly flammable liquid and vapour.



GHS07

Eye Irrit. 2 H319 Causes serious eye irritation.

2.2 Label elements**Labelling according to Regulation (EC) No 1272/2008**

The substance is classified and labelled according to the CLP regulation.

Hazard pictograms

GHS02 GHS07

Signal word Danger**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.

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

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

P370+P378 In case of fire: Use for extinction: CO₂, powder or water spray.

P403+P235 Store in a well-ventilated place. Keep cool.

P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

2.3 Other hazards**Results of PBT and vPvB assessment****PBT:** Not applicable.**vPvB:** Not applicable.**SECTION 3: Composition/information on ingredients****3.1 Chemical characterisation: Substances****CAS No. Description**

64-17-5 ethanol

(Contd. on page 3)

Safety data sheet
according to 1907/2006/EC, Article 31

Printing date 13.06.2022

Version number 14.0

Revision: 13.06.2022

Trade name: Ethanol absolute, molecular biology grade

(Contd. of page 2)

- **Identification number(s)**
- **EC number:** 200-578-6
- **Index number:** 603-002-00-5

SECTION 4: First aid measures**4.1 Description of first aid measures****After inhalation:**

Take affected persons into fresh air and keep quiet.

Supply fresh air. If required, provide artificial respiration. Keep patient warm. Consult doctor if symptoms persist.

After skin contact:

Generally the product does not irritate the skin.

Immediately wash with water and soap and rinse thoroughly.

Immediately remove contaminated clothing.

After eye contact:

Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor.

In the event that the injured person wears contact lenses, they must be removed as long as they are not stuck to the eyes, otherwise additional damage could occur.

After swallowing:

Depression of the central nervous system.

Drunkenness.

Loss of coordination.

Vertigo.

Narcosis.

Loss of knowledge

If symptoms persist consult doctor.

4.2 Most important symptoms and effects, both acute and delayed

The main symptoms are described for different cases of contact: Skin, eyes, inhalation and ingestion.

Dryness or cracking of the skin.

4.3 Indication of any immediate medical attention and special treatment needed

No further relevant information available.

SECTION 5: Firefighting measures**5.1 Extinguishing media****Suitable extinguishing agents:**

CO₂, powder or water spray. Fight larger fire with alcohol resistant foam.

Do NOT use pressurized water.

5.2 Special hazards arising from the substance or mixture

During heating or in case of fire poisonous gases are produced.

Highly flammable liquid and vapor.

5.3 Advice for firefighters**Protective equipment:**

In the work of extinction it is necessary to provide respiratory protection and full chemical protective clothing.

Cool exposed containers with water spray or mist.

Stay in danger area only with artificial systems and independent breathing apparatus.

Wear self-contained respiratory protective device.

Wear fully protective suit.

(Contd. on page 4)

Safety data sheet
according to 1907/2006/EC, Article 31

Printing date 13.06.2022

Version number 14.0

Revision: 13.06.2022

Trade name: Ethanol absolute, molecular biology grade

(Contd. of page 3)

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

Evacuate and restrict access.

Avoid sources of ignition.

Ventilate area.

Use water fog to evaporate or ventilate.

If confined space, use self-contained breathing apparatus.

Wear protective equipment. Keep unprotected persons away.

6.2 Environmental precautions:

Dilute with plenty of water.

Do not allow to enter sewers/ surface or ground water.

6.3 Methods and material for containment and cleaning up:

Dispose of solid materials or waste in an authorized center.

Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).

Ensure adequate ventilation.

6.4 Reference to other sections

See Section 7 for information on safe handling.

See Section 8 for information on personal protection equipment.

See Section 13 for disposal information.

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

Keep away from heat and direct sunlight.

Ensure good ventilation/exhaustion at the workplace.

Earthing/equipotential bonding of the container and receiving equipment.

Only use tools that do not produce sparks.

Take precautionary measures against electrostatic discharge.

Flammable vapors may accumulate in the container.

Use an explosion-proof device.

Wear an individual protective equipment.

Wear chemically sealed goggles and / or face shield.

Avoid contact with eyes and skin.

Do not eat, drink or smoke during use.

Wash hands after any manipulation.

Information about fire - and explosion protection:

Keep ignition sources away - Do not smoke.

Protect against electrostatic charges.

Protect from heat.

When heated the product forms flammable fumes.

7.2 Conditions for safe storage, including any incompatibilities**Storage:****Requirements to be met by storerooms and receptacles:**

Store in a cool location.

It must be stored between 5 - 40 °C.

Unsuitable material for receptacle: aluminium.

Do not use light alloy receptacles.

Suitable material for receptacles and pipes: steel or stainless steel.

Suitable material for containers and pipes: polyethylene.

Information about storage in one common storage facility:

Incompatible products:

Alkaline metals

Oxidizing agents

Ammonia

Peroxides

(Contd. on page 5)

Safety data sheet
according to 1907/2006/EC, Article 31

Printing date 13.06.2022

Version number 14.0

Revision: 13.06.2022

Trade name: Ethanol absolute, molecular biology grade

(Contd. of page 4)

- **Further information about storage conditions:**
Keep container tightly sealed.
Store in cool, dry conditions in well sealed receptacles.
Protect from heat and direct sunlight.
Store receptacle in a well ventilated area.
- **7.3 Specific end use(s)** No further relevant information available.

SECTION 8: Exposure controls/personal protection

- **8.1 Control parameters**
- **Additional information about design of technical facilities:** No further data; see item 7.
- **Ingredients with limit values that require monitoring at the workplace:**

64-17-5 ethanolWEL Long-term value: 1920 mg/m³, 1000 ppm

- **DNELs**
DNEL/DMEL Workers:
Acute - local effects, inhalation: 1900 mg / m³
Long term - systemic, cutaneous effects: 343 mg / kg of body weight / day
Long term - systemic, inhalation: 950 mg / m³
DNEL / DMEL Population in general:
Acute - local effects, inhalation: 950 mg / m³
Long-term - systemic effects, oral: 87 mg / kg body weight / day
Long term - systemic, cutaneous effects: 114 mg / kg of body weight / day
Long term - systemic effects, inhalation: 206 mg / m³
- **PNECs**
PNEC (Water):
Fresh water: 0.96 mg / l
Seawater: 0.79 mg / l
Flashing, fresh water: 2.75 mg / l
Flashing, seawater: 2,75 mg / l
PNEC (Sediments):
Freshwater sediments: 3.6 mg / kg dry weight
Sediments seawater: 2.9 mg / kg dry weight
PNEC (Earth): 0.63 mg / kg dry weight
PNEC (Oral):
Secondary poisoning: 720 mg / kg body weight
PNEC (STP):
Sewage station: 580 mg / l
- **Additional information:**
The lists valid during the making were used as basis.
This substance is totally or partially banned from being marketed and used as a phytosanitary and / or biocidal product.
For detailed information about the prohibitions, see: Database of biocidal products: <http://www.msssi.gob.es/ciudadanos/productos.do?tipo=plaguicidas>

Database of phytosanitary products: http://www.magrama.gob.es/agricultura/pags/fitos/registro/fichas/pdf/List_a_sa.pdf

- **8.2 Exposure controls**
- **Personal protective equipment:**
- **General protective and hygienic measures:**
Wash hands before breaks and at the end of work.
Avoid contact with the eyes and skin.
For handling the product should be mandatory use of personal protective equipment.
Moving work clothes after handling the product

(Contd. on page 6)

Safety data sheet
according to 1907/2006/EC, Article 31

Printing date 13.06.2022

Version number 14.0

Revision: 13.06.2022

Trade name: Ethanol absolute, molecular biology grade

(Contd. of page 5)

Ensure adequate ventilation. Local extraction and general ventilation are essential to avoid the accumulation of flammable vapor mixtures.

• Respiratory protection:

Suitable respiratory protective device recommended.

Filter type:

Type A. Organic compounds with high boiling point ($> 65^{\circ}\text{C}$)

Protection against steam.

Standard EN149.

• Protection of hands:

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.

Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture.

Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation

• Material of gloves

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer.

Butyl rubber, BR

Permeation: 6 (> 480 minutes)

Recommended thickness of the material: ≥ 0.3 mm

Standard EN 374

• Penetration time of glove material

The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

• Eye protection:

Tightly sealed goggles

It is generally known that contact lenses should not be used when working with chemicals because they can contribute to the severity of possible eye damage.

Standard EN 166

• Body protection: Use protective suit.**SECTION 9: Physical and chemical properties****• 9.1 Information on basic physical and chemical properties****• General Information****• Appearance:**

Form:

Fluid

Colour:

Colourless

• Odour:

Alcohol-like

• Odour threshold:

84 ppm

• pH-value:

7

• Change in condition

Melting point/freezing point:

-114°C

Initial boiling point and boiling range:

78.3°C

• Flash point:

13°C

• Flammability (solid, gas):

Not applicable.

(Contd. on page 7)

Safety data sheet
according to 1907/2006/EC, Article 31

Printing date 13.06.2022

Version number 14.0

Revision: 13.06.2022

Trade name: Ethanol absolute, molecular biology grade

(Contd. of page 6)

- **Ignition temperature:** 423 °C
- **Decomposition temperature:** Not determined.
- **Auto-ignition temperature:** Not determined.
- **Explosive properties:** Product is not explosive. However, formation of explosive air/vapour mixtures are possible.
- **Explosion limits:**
 - Lower:** 3.5 Vol %
 - Upper:** 15 Vol %
- **Vapour pressure at 20 °C:** 60.928 hPa
- **Density at 20 °C:** 0.788 g/cm³
- **Relative density:** Not determined.
- **Vapour density:** 1.59 (20°C, 1 atm)
- **Evaporation rate:** Not determined.
- **Solubility in / Miscibility with water at 20 °C:** 1,000 g/l
- **Partition coefficient: n-octanol/water:** Not determined.
- **Viscosity:**
 - Dynamic at 20 °C:** 1.2 mPas
 - Kinematic at 40 °C:** 0.51 mm²/s (DIN 53211/4)
- **9.2 Other information** No further relevant information available.

SECTION 10: Stability and reactivity

- **10.1 Reactivity** Highly flammable liquid and vapor.
- **10.2 Chemical stability**
- **Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.
- **10.3 Possibility of hazardous reactions**
 - Reacts with strong acids and oxidising agents.
 - Reacts with silver nitrate and mercuric nitrate.
- **10.4 Conditions to avoid** Heat, open flames and sparks
- **10.5 Incompatible materials:** Strong oxidizing agents.
- **10.6 Hazardous decomposition products:** No dangerous decomposition products known.

SECTION 11: Toxicological information

- **11.1 Information on toxicological effects**
- **Acute toxicity** Based on available data, the classification criteria are not met.
- **LD/LC50 values relevant for classification:**
 - Oral LD50 6200 mg/kg (rat)
 - Inhalative LC50/4 h 20000 mg/l (rat)
- **Primary irritant effect:**
- **Skin corrosion/irritation** Based on available data, the classification criteria are not met.
- **Serious eye damage/irritation** Causes serious eye irritation.
- **Respiratory or skin sensitisation** Based on available data, the classification criteria are not met.
- **Additional toxicological information:**
- **CMR effects (carcinogenicity, mutagenicity and toxicity for reproduction)**
- **Germ cell mutagenicity** Based on available data, the classification criteria are not met.

(Contd. on page 8)

Safety data sheet according to 1907/2006/EC, Article 31

Printing date 13.06.2022

Version number 14.0

Revision: 13.06.2022

Trade name: Ethanol absolute, molecular biology grade

(Contd. of page 7)

- **Carcinogenicity** Based on available data, the classification criteria are not met.
- **Reproductive toxicity** 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.

SECTION 12: Ecological information

- **12.1 Toxicity**
- **Aquatic toxicity:**

This product is not considered harmful to aquatic organisms or that causes long-term adverse effects on the environment.

CL50 fish: 13000 mg / l Pimephales promelas
EC50 other aquatic organisms 1: 857 mg / l Artemia salina
EC50 72h algae 1: 12900 mg / l Selenastrum capricornutum
- **12.2 Persistence and degradability** Easily biodegradable
- **12.3 Bioaccumulative potential** Log Pow: -0,35
- **12.4 Mobility in soil** No further relevant information available.
- **Additional ecological information:**
- **General notes:**

Water hazard class 1 (German Regulation) (Assessment by list): slightly hazardous for water
Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.
- **12.5 Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.
- **12.6 Other adverse effects** No further relevant information available.

SECTION 13: Disposal considerations

- **13.1 Waste treatment methods**
- **Recommendation**

Must not be disposed together with household garbage. Do not allow product to reach sewage system.
- **Uncleaned packaging:**
- **Recommendation:** Disposal must be made according to official regulations.
- **Recommended cleansing agents:** Water, if necessary together with cleansing agents.

SECTION 14: Transport information

- **14.1 UN-Number**
 - **ADR, IMDG, IATA**
 - **14.2 UN proper shipping name**
 - **ADR**
 - **IMDG**
 - **IATA**
- UN1170
1170 ETHANOL (ETHYL ALCOHOL)
ETHANOL (ETHYL ALCOHOL)
ETHANOL

(Contd. on page 9)

Safety data sheet

according to 1907/2006/EC, Article 31

Printing date 13.06.2022

Version number 14.0

Revision: 13.06.2022

Trade name: Ethanol absolute, molecular biology grade

(Contd. of page 8)

14.3 Transport hazard class(es)**ADR, IMDG, IATA**

Class	3 Flammable liquids.
Label	3
14.4 Packing group	
ADR, IMDG, IATA	II
14.5 Environmental hazards:	
Marine pollutant:	No
14.6 Special precautions for user	Warning: Flammable liquids.
Hazard identification number (Kemler code):	33
EMS Number:	F-E,S-D
Stowage Category	A
14.7 Transport in bulk according to Annex II of Marpol and the IBC Code	Not applicable.
Transport/Additional information:	
<hr/>	
ADR	
Limited quantities (LQ)	1L
Transport category	2
Tunnel restriction code	D/E
UN "Model Regulation":	UN 1170 ETHANOL (ETHYL ALCOHOL), 3, II

SECTION 15: Regulatory information

- **15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**
- **Directive 2012/18/EU**
- **Named dangerous substances - ANNEX I -**
- **Seveso category** P5c FLAMMABLE LIQUIDS
- **Qualifying quantity (tonnes) for the application of lower-tier requirements** 5000 t
- **Qualifying quantity (tonnes) for the application of upper-tier requirements** 50000 t
- **REGULATION (EC) No 1907/2006 ANNEX XVII** Conditions of restriction: 3, 40
- **DIRECTIVE 2011/65/EU on the restriction of the use of certain hazardous substances in electrical and electronic equipment – Annex II**
Substance is not listed.
- **15.2 Chemical safety assessment:** A Chemical Safety Assessment has been carried out.

SECTION 16: Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

- **Classification according to Regulation (EC) No 1272/2008**
The classification of the mixture is generally based on the calculation method using substance data according to Regulation (EC) No 1272/2008.
- **Department issuing SDS:** product safety department
- **Contact:** msds@scharlab.com
- **Abbreviations and acronyms:**
RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)

(Contd. on page 10)

Safety data sheet
according to 1907/2006/EC, Article 31

Printing date 13.06.2022

Version number 14.0

Revision: 13.06.2022

Trade name: Ethanol absolute, molecular biology grade

(Contd. of page 9)

ICAO: International Civil Aviation Organisation

ADR: Accord relatif au transport international des marchandises dangereuses par route (European Agreement Concerning the International Carriage of Dangerous Goods by Road)

IMDG: International Maritime Code for Dangerous Goods

IATA: International Air Transport Association

GHS: Globally Harmonised System of Classification and Labelling of Chemicals

EINECS: European Inventory of Existing Commercial Chemical Substances

CAS: Chemical Abstracts Service (division of the American Chemical Society)

DNEL: Derived No-Effect Level (REACH)

PNEC: Predicted No-Effect Concentration (REACH)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

PBT: Persistent, Bioaccumulative and Toxic

vPvB: very Persistent and very Bioaccumulative

Flam. Liq. 2: Flammable liquids – Category 2

Eye Irrit. 2: Serious eye damage/eye irritation – Category 2

(Contd. on page 11)

Safety data sheet
according to 1907/2006/EC, Article 31

Printing date 13.06.2022

Version number 14.0

Revision: 13.06.2022

Trade name: Ethanol absolute, molecular biology grade

(Contd. of page 10)

Annex: Exposure scenario 1**1 - Short title of the exposure scenario**

Exposure scenario: Ethanol absolute

Industrial use

Sector of Use

SU3 Industrial uses: Uses of substances as such or in preparations at industrial sites

Process category

PROC1 Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions.

PROC2 Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions

PROC3 Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition

PROC4 Chemical production where opportunity for exposure arises

PROC5 Mixing or blending in batch processes

PROC7 Industrial spraying

PROC8a Transfer of substance or mixture (charging and discharging) at non-dedicated facilities

PROC8b Transfer of substance or mixture (charging and discharging) at dedicated facilities

PROC10 Roller application or brushing

PROC13 Treatment of articles by dipping and pouring

PROC15 Use as laboratory reagent

Environmental release category

ERC4 Use of non-reactive processing aid at industrial site (no inclusion into or onto article)

Description of the activities / processes covered in the Exposure Scenario

Process assistant

Cleaning agent

Solvent or component of a coating

Application methods included:

- Application with brush or roller.

- Bath treatment

- Spray

- Immersion

- Soaking

- Manual or automatic spraying

2 - Conditions of use**Duration and frequency**

Continuous process

Emission days (days/year): 300

8hrs (full working shift).

Environment

Local dissolution factor in fresh water: 10

Local dissolution factor in seawater: 100

Wastewater is to be treated by a municipal STP. Municipal STP discharge rate <2E3 m3/d.

Estimated substance removal from wastewater via domestic sewage treatment (%): 87

Physical parameters

The substance is a unique structure

Not hydrophobic

Liquid, vapor pressure 0.5 - 10 kPa at standardized temperature and pressure

Miscible in water

Practically non-toxic to aquatic organisms

Readily biodegradable

Low bioaccumulation potential

Physical state Fluid**Concentration of the substance in the mixture**

It covers a percentage of substance in the product up to 100 %

Raw material.

(Contd. on page 12)

Safety data sheet
according to 1907/2006/EC, Article 31

Printing date 13.06.2022

Version number 14.0

Revision: 13.06.2022

Trade name: Ethanol absolute, molecular biology grade

(Contd. of page 11)

• Used amount per time or activity

3000 tons per year

1000 kg per day

• Other operational conditions**• Other operational conditions affecting environmental exposure**

Source: ESVOC SpERC 4.3a.v1

Fraction released to air from process (initial release previous to MGR): 0.98

Fraction released to residual water from process (initial release previous to MGR): 0.01

Fraction released to ground from process (initial release previous to MGR): 0

• Other operational conditions affecting worker exposure

Assumes use at not more than 20 °C above ambient temperature, unless stated differently.

Take precautionary measures against static discharge.

Keep away from sources of ignition - No smoking.

May be rolled or sprayed.

Ensure adequate ventilation, especially in closed rooms.

• Risk management measures**• Worker protection****• Organisational protective measures**

Provide a good standard of controlled ventilation (10 to 15 air changes per hour)

Surround with a dyke storage facilities to prevent contamination of soil and water in case of spillage

Avoid the discharge to the environment, in line with the regulatory requirements

Keep good industrial hygiene.

Make sure that the workplace is well-lit and organised.

Do not exceed normal working hours per worker.

• Technical protective measures

Use product only in enclosed systems.

Keep receptacles tightly sealed.

Provide explosion-proof electrical equipment.

• Personal protective measures

Tightly sealed goggles

Avoid contact with the eyes and skin.

Do not inhale gases / fumes / aerosols.

Detailed measures on hand protection according to Safety Data Sheet, section 8.

• Measures for consumer protection Ensure adequate labelling.**• Environmental protection measures****• Air** Treat the emissions to the atmosphere to provide a removal efficiency typical of (%): 90**• Water**The product should not be released into water without pretreatment. An on-site wastewater treatment is recommended. The typical site treatment technology of wastewater achieves removal efficiency (%): (≥ 87)Size of sewage treatment plant (m³/d): 2000

In case of discharge to a domestic wastewater treatment plant, it is not necessary to treat the wastewater in situ.

• Soil

No significant emissions to the terrestrial environment are expected.

No special measures required.

• Notes In case of unintended release of the product: See section 6 of the Safety Data Sheet.**• Disposal measures**

Estimated amount has gone to waste, no more than: 5 %

Type of treatment suitable for waste: incineration. Elimination efficiency (%): 99.98

Type of treatment suitable for waste: fuel for cement kilns. Elimination efficiency (%): 99.98

Treat as hazardous waste.

Forward for special waste incineration in compliance with local legal provisions.

Disposal must be made according to official regulations.

Ensure that waste is collected and contained.

(Contd. on page 13)

Safety data sheet

according to 1907/2006/EC, Article 31

Printing date 13.06.2022

Version number 14.0

Revision: 13.06.2022

Trade name: Ethanol absolute, molecular biology grade

(Contd. of page 12)

Disposal procedures

Product residues are incinerated as special waste.

Must not be disposed together with household garbage. Do not allow product to reach sewage system.

Waste type Partially emptied and uncleaned packaging

3 - Exposure estimation
Worker (dermal)

PROC 1. 0.03 mg / kg / day. Risk characterization ratio: <0.001

PROC 2. 1.4 mg / kg / day. Risk characterization ratio: 0.004

PROC 3. 0.69 mg / kg / day. Risk characterization ratio: 0.002

PROC 4. 6.9 mg / kg / day. Risk characterization ratio: 0.02

PROC 5. 14 mg / kg / day. Risk characterization ratio: 0.04

PROC 7. 43 mg / kg / day. Risk characterization ratio: 0.125

PROC 8a. 14 mg / kg / day. Risk characterization ratio: 0.04

PROC 8b. 14 mg / kg / day. Risk characterization ratio: 0.04

PROC 10. 27 mg / kg / day. Risk characterization ratio: 0.08

PROC 13. 14 mg / kg / day. Risk characterization ratio: 0.04

PROC 15. 0.34 mg / kg / day. Risk characterization ratio: <0.001

Worker (inhalation)

PROC: 1. 8 hours average 0.019 mg / m³. Risk characterization ratio: <0.001

PROC: 2. 8 hours average 9.6 mg / m³. Risk characterization ratio: 0.01

PROC: 3. 8 hours average 19 mg / m³. Risk characterization ratio: 0.02

PROC: 4. 8 hours average 38 mg / m³. Risk characterization ratio: 0.04

PROC: 5. 8 hours average 96 mg / m³. Risk characterization ratio: 0.101

PROC: 7. 8 hours average 140 mg / m³. Risk characterization ratio: 0.151

PROC: 8a. 8 hours average 96 mg / m³. Risk characterization ratio: 0.101

PROC: 8b. 8 hours average 48 mg / m³. Risk characterization ratio: 0.05

PROC: 10. 8 hours average 96 mg / m³. Risk characterization ratio: 0.101

PROC: 13. 8 hours average 96 mg / m³. Risk characterization ratio: 0.101

PROC: 15. 8 hours average 19 mg / m³. Risk characterization ratio: 0.02

Environment

PEC for microorganisms in municipal sewage plant: 6.32E + 00 mg / l. Risk characterization ratio: 1.09E-02

Local PEC in surface waters: 5.77E-01 mg / l. Risk characterization ratio: 6.01E-01

Local PEC in freshwater sediment 2.21E + 00 mg / l. Risk characterization ratio: 6.01E-01

Local PEC in seawater during the emission episode: 6.35E-02 mg / l. Risk characterization ratio: 8.04E-02

Local PEC in marine sediments: 2.44E-01 mg / l. Risk characterization ratio: 8.05E-02

Local PEC in the soil: 5.25E-02 mg / l. Risk characterization ratio: 3.09E-01

The risk of environmental exposure is based on fresh water.

4 - Guidance for downstream users

Environment:

Msafe: 124000 kg / day

The guidelines are based on the assumed operating conditions, which may not be applicable to all sites; therefore, it may be necessary to apply scaling to define the risk management measures specific to each site.

$$(\text{mspERC} * (1 - \text{EER}, \text{spERC})) * \text{Frelease}, \text{spERC} / (\text{DFspERC}) \geq (\text{msite} * (1 - \text{EER}, \text{site}) * \text{Frelease}, \text{site}) / (\text{DFsite})$$

• MspERC: Rate of use of the substance in the SPERC

• EER, spERC: Efficiency of the MGR in the SPERC

• EER, spERC: Fraction of initial emission in the SPERC

• DFspERC: Dissolution factor in the effluent rivers of the municipal wastewater treatment plant

• Msite: Rate of use of the substance at the site.

• EER, site: Effectiveness of the MGR on the site.

• Frelease, site: Fraction of initial emission at the site.

(Contd. on page 14)

Safety data sheet
according to 1907/2006/EC, Article 31

Printing date 13.06.2022

Version number 14.0

Revision: 13.06.2022

Trade name: Ethanol absolute, molecular biology grade

(Contd. of page 13)

· DFsite: Dissolution factor in the effluent rivers of the municipal wastewater treatment plant.

If the escalation reveals the possibility of unsafe use (eg, CCR > 1), additional MGR or site-specific chemical safety assessment will be required. More information on scaling and control technologies in the SPERC data sheet (<http://cefic.org/en/reach-for-industries-libraries.html>)

Whether the downstream user acts within the scope of the Exposure Scenario can be verified based on the information in sections 1 to 8.

Whether the downstream user uses the substance / the mixture within the scope of the Exposure Scenario can be determined by means of a technical assessment.

For the risk assessment, the tools recommended by ECHA can be used.

Health:

Inhalation (vapor). No correction is required since an 8-hour exposure is assumed in all cases (evaluation in the worst case). No correction is required as it is assumed that all exposures correspond to substance concentrations of up to 100%.

Cutaneous: No correction is required as it is assumed that all exposures correspond to substance concentrations of up to 100%. No correction is required since an 8-hour exposure is assumed in all cases (evaluation in the worst case).

(Contd. on page 15)

Safety data sheet
according to 1907/2006/EC, Article 31

Printing date 13.06.2022

Version number 14.0

Revision: 13.06.2022

Trade name: Ethanol absolute, molecular biology grade

(Contd. of page 14)

Annex: Exposure scenario 2**1 - Short title of the exposure scenario**

Exposure scenario: Ethanol absolute

Laboratory use

Sector of Use

SU22 Professional uses: Public domain (administration, education, entertainment, services, craftsmen)

Process category

PROC10 Roller application or brushing

PROC15 Use as laboratory reagent

Environmental release category

ERC8a Widespread use of non-reactive processing aid (no inclusion into or onto article, indoor)

Description of the activities / processes covered in the Exposure Scenario

Use of small quantities in laboratory environments, including material transfers and equipment cleaning.

2 - Conditions of use**Duration and frequency**

Continuous process

Emission days (days/year): 365

8hrs (full working shift).

Physical parameters

The substance is a unique structure

Not hydrophobic

Liquid, vapor pressure 0.5 - 10 kPa at standardized temperature and pressure

Miscible in water

Practically non-toxic to aquatic organisms

Readily biodegradable

Low bioaccumulation potential

Physical state Fluid**Concentration of the substance in the mixture**

It covers a percentage of substance in the product up to 100 %

Raw material.

Used amount per time or activity

0.01 tons per year

0.0274 kg per day

Other operational conditions**Other operational conditions affecting environmental exposure**

Source: ESVOC SpERC 8.17.v1

Fraction released to air from process (initial release previous to MGR): 0.5

Fraction released to residual water from process (initial release previous to MGR): 0.5

Fraction released to ground from process (initial release previous to MGR): 0

Other operational conditions affecting worker exposure

Assumes use at not more than 20 °C above ambient temperature, unless stated differently.

Take precautionary measures against static discharge.

Keep away from sources of ignition - No smoking.

May be rolled or sprayed.

Ensure adequate ventilation, especially in closed rooms.

Risk management measures**Worker protection****Organisational protective measures**

Avoid the discharge to the environment, in line with the regulatory requirements

Keep good industrial hygiene.

Make sure that the workplace is well-lit and organised.

Do not exceed normal working hours per worker.

(Contd. on page 16)

Safety data sheet

according to 1907/2006/EC, Article 31

Printing date 13.06.2022

Version number 14.0

Revision: 13.06.2022

Trade name: Ethanol absolute, molecular biology grade

(Contd. of page 15)

• Technical protective measures

Use product only in enclosed systems.
Keep receptacles tightly sealed.
Provide explosion-proof electrical equipment.

• Personal protective measures

Tightly sealed goggles
Avoid contact with the eyes and skin.
Do not inhale gases / fumes / aerosols.
Detailed measures on hand protection according to Safety Data Sheet, section 8.

• Measures for consumer protection Ensure adequate labelling.**• Environmental protection measures****• Air**

No special measures required.
Treat the emissions to the atmosphere to provide a removal efficiency typical of (%): 0

• Water

Do not release waste water directly into the environment. In situ treatment of wastewater is not taken for granted.

• Soil

No significant emissions to the terrestrial environment are expected.
No special measures required.

• Notes In case of unintended release of the product: See section 6 of the Safety Data Sheet.**• Disposal measures**

Type of treatment suitable for waste: incineration. Elimination efficiency (%): 99.98
Treat as hazardous waste.

Forward for special waste incineration in compliance with local legal provisions.

Disposal must be made according to official regulations.

Ensure that waste is collected and contained.

• Disposal procedures

Product residues are incinerated as special waste.

Must not be disposed together with household garbage. Do not allow product to reach sewage system.

• Waste type Partially emptied and uncleaned packaging**• 3 - Exposure estimation****• Worker (dermal)**

PROC 10. 27 mg / kg / day. Risk characterization ratio: 0.08

PROC 15. 0.34 mg / kg / day. Risk characterization ratio: <0.001

• Worker (inhalation)

PROC: 10. 8 hours average 96 mg / m³. Risk characterization ratio: 0.101

PROC: 15. 8 hours average 19 mg / m³. Risk characterization ratio: 0.02

• Environment

PEC for microorganisms in municipal sewage plant: 6.32E + 00 mg / l. Risk characterization ratio: 1.09E-02

Local PEC in surface waters: 5.77E-01 mg / l. Risk characterization ratio: 6.01E-01

Local PEC in freshwater sediment 2.21E + 00 mg / l. Risk characterization ratio: 6.01E-01

Local PEC in seawater during the emission episode: 6.35E-02 mg / l. Risk characterization ratio: 8.04E-02

Local PEC in marine sediments: 2.44E-01 mg / l. Risk characterization ratio: 8.05E-02

Local PEC in the soil: 5.25E-02 mg / l. Risk characterization ratio: 3.09E-01

The risk of environmental exposure is based on the soil.

• 4 - Guidance for downstream users

Environment:

Msafe: 124000 kg / day

Not applicable for wide dispersive applications.

More information on scaling and control technologies in the SPERC data sheet (<http://cefic.org/en/reach-for-industries-libraries.html>)

(Contd. on page 17)

Safety data sheet
according to 1907/2006/EC, Article 31

Printing date 13.06.2022

Version number 14.0

Revision: 13.06.2022

Trade name: Ethanol absolute, molecular biology grade

(Contd. of page 16)

Whether the downstream user acts within the scope of the Exposure Scenario can be verified based on the information in sections 1 to 8.

Whether the downstream user uses the substance / the mixture within the scope of the Exposure Scenario can be determined by means of a technical assessment.

For the risk assessment, the tools recommended by ECHA can be used.

Health:

Inhalation (vapor). No correction is required since an 8-hour exposure is assumed in all cases (evaluation in the worst case). No correction is required as it is assumed that all exposures correspond to substance concentrations of up to 100%.

Cutaneous: No correction is required as it is assumed that all exposures correspond to substance concentrations of up to 100%. No correction is required since an 8-hour exposure is assumed in all cases (evaluation in the worst case).