

Safety data sheet

according to Regulation (EC) No 1907/2006, Article 31

Printing date 18.11.2025

Version number 6 (replaces version 5)

Revision: 18.11.2025

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

- **1.1 Product identifier**
- **Creation date** 03.05.2010
- **Trade name:** 1,4-dioxane
- **Article number:** 0424
- **CAS Number:**
123-91-1
- **EC number:**
204-661-8
- **Index number:**
603-024-00-5
- **Registration number** 01-2119462837-26-XXXX
- **1.2 Relevant identified uses of the substance or mixture and uses advised against**
Only for the use of professionals users
- **Life cycle stages**
IS Use at industrial Sites
M Manufacture
F Formulation or re-packing
PW Widespread use by professional workers
- **Sector of Use**
SU9 Manufacture of fine chemicals
SU3 Industrial uses: Uses of substances as such or in preparations at industrial sites
SU10 Formulation [mixing] of preparations and/or re-packaging (excluding alloys)
SU24 Scientific research and development
- **Product category**
PC19 Intermediate
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
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
PROC9 Transfer of substance or mixture into small containers (dedicated filling line, including weighing)
PROC15 Use as laboratory reagent
- **Environmental release category**
ERC1 Manufacture of the substance
ERC2 Formulation into mixture
ERC4 Use of non-reactive processing aid at industrial site (no inclusion into or onto article)
ERC6a Use of intermediate
ERC6b Use of reactive processing aid at industrial site (no inclusion into or onto article)
- **Application of the substance / the mixture**
Chemical for research, development, manufacturing, laboratory chemical for analysis.

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· 1.3 Details of the supplier of the safety data sheet

· **Manufacturer/Supplier:**

Biosolve Chimie

20 Rue Roger Husson, 57260 Dieuze, France

Tel: +33 3 878 675 80/81/82/83/84/85

Email: info@biosolvechimie.com

Biosolve B.V.

Kerkhofstraat 21, 5554HG Valkenswaard, the Netherlands.

Tel: +31-(0)40-2071300

Fax: +31-(0)40-2048537

Email: info@biosolve-chemicals.com

· **Further information obtainable from:** Product safety department.

· 1.4 Emergency telephone number:

Contact list of appointed bodies for information relating to emergency health response, according to Art. 45(1) Reg. (EC) No 1272/2008.

See at <https://poisoncentres.echa.europa.eu/appointed-bodies>

Help desk: <http://echa.europa.eu/web/guest/support/helpdesks/national-helpdesks/list-of-national-helpdesks>.

For more information see section 16.

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.



GHS08 health hazard

Carc. 1B H350 May cause cancer.



GHS07

Eye Irrit. 2 H319 Causes serious eye irritation.

STOT SE 3 H335 May cause respiratory irritation.

· 2.2 Label elements

· Labelling according to Regulation (EC) No 1272/2008

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

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· Hazard pictograms



GHS02 GHS07 GHS08

· Signal word *Danger*

· Hazard statements

H225 Highly flammable liquid and vapour.

H319 Causes serious eye irritation.

H350 May cause cancer.

H335 May cause respiratory irritation.

· Precautionary statements

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

P241 Use explosion-proof [electrical/ventilating/lighting] equipment.

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.

P405 Store locked up.

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

· Additional information:

EUH019 May form explosive peroxides.

EUH066 Repeated exposure may cause skin dryness or cracking.

Restricted to professional users.

· 2.3 Other hazards

· Results of PBT and vPvB assessment

· **PBT:** Not applicable.

· **vPvB:** Not applicable.

SECTION 3: Composition/information on ingredients

· 3.1 Substances

· CAS No. Description

CAS: 123-91-1 1,4-dioxane

· Identification number(s)

· **EC number:** 204-661-8

· **Index number:** 603-024-00-5

· SVHC

CAS: 123-91-1 1,4-dioxane

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SECTION 4: First aid measures

- **4.1 Description of first aid measures**
- **After inhalation:** Supply fresh air; consult doctor in case of complaints.
- **After skin contact:** Generally the product does not irritate the skin.
- **After eye contact:**
Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor.
- **After swallowing:** If symptoms persist consult doctor.
- **4.2 Most important symptoms and effects, both acute and delayed**
No further relevant information available.
- **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 fires with water spray or alcohol resistant foam.
- **5.2 Special hazards arising from the substance or mixture** No further relevant information available.
- **5.3 Advice for firefighters**
- **Protective equipment:** No special measures required.

SECTION 6: Accidental release measures

- **6.1 Personal precautions, protective equipment and emergency procedures**
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:**
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
Dispose contaminated material as waste according to section 13.
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**
Ensure good ventilation/exhaustion at the workplace.
Open and handle receptacle with care.
- **Information about fire - and explosion protection:**
Keep ignition sources away - Do not smoke.

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Protect against electrostatic charges.

· 7.2 Conditions for safe storage, including any incompatibilities

· Storage:

· **Requirements to be met by storerooms and receptacles:** Store in a cool location.

· **Information about storage in one common storage facility:** Not required.

· Further information about storage conditions:

Keep container tightly sealed.

Store in cool, dry conditions in well sealed receptacles.

· 7.3 Specific end use(s) No further relevant information available.

SECTION 8: Exposure controls/personal protection

· 8.1 Control parameters

· Ingredients with limit values that require monitoring at the workplace:

CAS: 123-91-1 1,4-dioxane
IOELV Long-term value: 73 mg/m³, 20 ppm

· PNECs

123-91-1

Fresh water 10 mg/l

Fresh water sediment 37 mg/kg

Sea water 0.67 mg/l

Aquatic intermittent release 10 mg/l

Sewage treatment plan t2700 mg/l

Soil 0.153 mg/kg

· **Additional information:** The lists valid during the making were used as basis.

· 8.2 Exposure controls

· **Appropriate engineering controls** No further data; see section 7.

· **Individual protection measures, such as personal protective equipment**

· General protective and hygienic measures:

Keep away from foodstuffs, beverages and feed.

Immediately remove all soiled and contaminated clothing

Wash hands before breaks and at the end of work.

Store protective clothing separately.

Avoid contact with the eyes.

Avoid contact with the eyes and skin.

· Respiratory protection:

Recommended Filter type: Filter A (acc. to DIN 3181) for vapours of organic compounds

The entrepreneur has to ensure that maintenance, cleaning and testing of respiratory protective devices are carried out according to the instructions of the producer.

These measures have to be properly documented.

In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use self-contained respiratory protective device.

· Hand protection

Check protective gloves prior to each use for their proper condition.

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The selected protective gloves have to satisfy the specifications of EU Directive 89/686/EEC and the standard EN 374 derived from it.



Protective gloves

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation. Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation

· **Material of gloves**

Butyl rubber, BR

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.

· **Penetration time of glove material**

Full contact

Material: butyl-rubber

Minimum layer thickness: 0.3 mm

Break through time: 480 min

Splash contact

Material: butyl-rubber

Minimum layer thickness: 0.3 mm

Break through time: 480 min

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

· **Eye/face protection**



Tightly sealed goggles

SECTION 9: Physical and chemical properties

· **9.1 Information on basic physical and chemical properties**

· **General Information**

· **Physical state**

Liquid

· **Colour:**

Colourless

· **Odour:**

Ether-like

· **Odour threshold:**

No data available

· **Melting point/freezing point:**

11.8 °C

· **Boiling point or initial boiling point and boiling range**

101.3 °C

· **Flammability**

Highly flammable.

· **Lower and upper explosion limit**

· **Lower:**

1.9 Vol %

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· Upper:	22.5 Vol %
· Flash point:	12 °C (closed cup)
· Auto-ignition temperature:	375 °C
· Decomposition temperature:	No data available
· pH	6-8
· Viscosity:	
· Dynamic at 20 °C:	1.2 mPas
· Solubility	
· water:	Fully miscible.
· Partition coefficient n-octanol/water (log value)	-0.56864
· Vapour pressure at 20 °C:	41 hPa
· Density and/or relative density	
· Density at 20 °C:	1.03 g/cm ³
· Relative density	1.034 at 25 °C
· Vapour density	3.04 - (Air = 1.0)

· 9.2 Other information	
· Appearance:	
· Form:	Fluid
· Important information on protection of health and environment, and on safety.	
· Ignition temperature:	No data available
· Explosive properties:	May form explosive peroxides.
· Molecular weight	88.11 g/mol
· Change in condition	
· Softening point/range	
· Oxidising properties	Non oxidizer.
· Evaporation rate	No data available

· Information with regard to physical hazard classes	
· Explosives	Void
· Flammable gases	Void
· Aerosols	Void
· Oxidising gases	Void
· Gases under pressure	Void
· Flammable liquids	Highly flammable liquid and vapour.
· Flammable solids	Void
· Self-reactive substances and mixtures	Void
· Pyrophoric liquids	Void
· Pyrophoric solids	Void
· Self-heating substances and mixtures	Void
· Substances and mixtures, which emit flammable gases in contact with water	Void
· Oxidising liquids	Void
· Oxidising solids	Void
· Organic peroxides	Void
· Corrosive to metals	Void

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· Desensitised explosives		Void
· Molecular Weight		
123-91-1	1,4-dioxane	88.11 gr/mole
· Molecular Formula		
123-91-1	1,4-dioxane	C ₄ H ₈ O ₂

SECTION 10: Stability and reactivity

- **10.1 Reactivity** No further relevant information available.
- **10.2 Chemical stability**
- **Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.
- **10.3 Possibility of hazardous reactions** No dangerous reactions known.
- **10.4 Conditions to avoid** No further relevant information available.
- **10.5 Incompatible materials:** No further relevant information available.
- **10.6 Hazardous decomposition products:** No dangerous decomposition products known.

SECTION 11: Toxicological information

- **11.1 Information on hazard classes as defined in Regulation (EC) No 1272/2008**
- **Acute toxicity** Based on available data, the classification criteria are not met.

· **LD/LC50 values relevant for classification:**

Oral	LD50	5,700 mg/kg (mouse)
Dermal	LD50	7,600 mg/kg (rabbit)
Inhalative	LC50/4 h	46 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.
- **Germ cell mutagenicity** Based on available data, the classification criteria are not met.
- **Carcinogenicity** May cause cancer.
- **Reproductive toxicity** Based on available data, the classification criteria are not met.
- **STOT-single exposure** May cause respiratory irritation.
- **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**
- **Endocrine disrupting properties** Substance is not listed.

SECTION 12: Ecological information

- **12.1 Toxicity**
- **Aquatic toxicity:** No further relevant information available.
- **12.2 Persistence and degradability** No further relevant information available.

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- **12.3 Bioaccumulative potential** No further relevant information available.
- **12.4 Mobility in soil** No further relevant information available.
- **12.5 Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.
- **12.6 Endocrine disrupting properties**
The product does not contain substances with endocrine disrupting properties.
- **12.7 Other adverse effects**
- **Additional ecological information:**
- **General notes:**
Water hazard class 3 (German Regulation) (Assessment by list): extremely hazardous for water
Do not allow product to reach ground water, water course or sewage system, even in small quantities.
Danger to drinking water if even extremely small quantities leak into the ground.

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.

· **European waste catalogue**

HP3	Flammable
HP4	Irritant - skin irritation and eye damage
HP5	Specific Target Organ Toxicity (STOT)/Aspiration Toxicity
HP7	Carcinogenic
HP15	Waste capable of exhibiting a hazardous property listed above not directly displayed by the original waste.

- **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

- | | |
|--|---------------------------|
| <ul style="list-style-type: none"> · 14.1 UN number or ID number · ADR, IMDG, IATA | UN1165 |
| <ul style="list-style-type: none"> · 14.2 UN proper shipping name · ADR · IMDG, IATA | UN1165 DIOXANE
DIOXANE |

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· 14.3 Transport hazard class(es)

· ADR



· **Class** 3 (F1) Flammable liquids.
· **Label** 3

· 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** B

· 14.7 Maritime transport in bulk according to IMO instruments

Not applicable.

· Transport/Additional information:

· ADR

· **Limited quantities (LQ)** 1L
· **Excepted quantities (EQ)** Code: E2
Maximum net quantity per inner packaging: 30 ml
Maximum net quantity per outer packaging: 500 ml
· **Transport category** 2
· **Tunnel restriction code** D/E

· IMDG

· **Limited quantities (LQ)** 1L
· **Excepted quantities (EQ)** Code: E2
Maximum net quantity per inner packaging: 30 ml
Maximum net quantity per outer packaging: 500 ml

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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** Substance is not listed.
- **Seveso category P5c FLAMMABLE LIQUIDS**
- **Qualifying quantity (tonnes) for the application of lower-tier requirements** 5,000 t
- **Qualifying quantity (tonnes) for the application of upper-tier requirements** 50,000 t
- **REGULATION (EC) No 1907/2006 ANNEX XVII** Conditions of restriction: 3, 28, 40, 75
- **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.
- **REGULATION (EU) 2019/1148**
- **Annex I - RESTRICTED EXPLOSIVES PRECURSORS** (Upper limit value for the purpose of licensing under Article 5(3))
Substance is not listed.
- **Annex II - REPORTABLE EXPLOSIVES PRECURSORS** Substance is not listed.
- **Regulation (EC) No 273/2004 on drug precursors** Substance is not listed.
- **Regulation (EC) No 111/2005 laying down rules for the monitoring of trade between the Community and third countries in drug precursors**
Substance is not listed.
- **National regulations:**
- **Information about limitation of use:**
Workers are not allowed to be exposed to this hazardous material. Exceptions can be made by the authorities in certain cases.
- **Other regulations, limitations and prohibitive regulations**

· **Substances of very high concern (SVHC) according to REACH, Article 57**

CAS: 123-91-1	1,4-dioxane
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· **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.

- **Department issuing SDS:** Product safety department
- **Contact:**
Austria Vergiftungsinformationszentrale (VIZ) (+43) 1 406 43 43

Belgium Centre Antipoisons (+32) 070 245 245
Antigifcentrum 070 245 245 (+32)

Bulgaria Национален токсикологичен информационен център
Многопрофилна болница за активно лечение и спешна медицина "Н.И.Пирогов" (+359) 2 9154 233

Croatia Centar za kontrolu otrovanja (+385) 01 2348 342

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*Cyprus Υπουργείο Εργασίας, Πρόνοιας και Κοινωνικών Ασφαλίσεων
Τμήμα Επιθεώρησης Εργασίας 1401*

Czech Republic Toxikologické informační středisko (+420) 224 919 293, +(420) 224 915 402

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Finland Myrkytystietokeskus 0800 147 111, 09 471 977

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Centres Antipoison et de Toxicovigilance

ANGERS: 02 41 48 21 21

BORDEAUX: 05 56 96 40 80

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LYON: 04 72 11 69 11

MARSEILLE: 04 91 75 25 25

NANCY: 03 83 22 50 50

PARIS: 01 40 05 48 48

STRASBOURG: 03 88 37 37 37

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Germany Giftnotruf der Charité, Berlin: 030/19240

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Informationszentrale gegen Vergiftungen Zentrum für Kinderheilkunde Universitätsklinikum Bonn: 0228/19240

Giftnotruf Erfurt Gemeinsames Giftinformationszentrum der Länder Mecklenburg-Vorpommern, Sachsen, Sachsen-Anhalt und Thüringen: 0361/730 730

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Vergiftungs-Informations-Zentrale Zentrum für Kinder- und Jugendmedizin Universitätsklinikum: 0761/19240

Giftnotruf München Toxikologische Abteilung der II. Med. Klinik und Poliklinik: 089/19240

Great Britain Members of the public seeking specific information on poisons should contact: In England and Wales: NHS 111 - dial 111 In Scotland: NHS 24 - dial 111

Greece Κέντρο Δηλητηριάσεων (+30) 2107793777

Hungary Országos Kémiai Biztonsági Intézet (OKBI) +(36)-80-201-199

Iceland LANDSPÍTALI - THE NATIONAL UNIVERSITY HOSPITAL Tel. (+354) 543 1000

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Ireland National Poisons Information Centre: +353 (1) 809 2166 (8.00 a.m. to 10.00 p.m. 7 days a week)
Healthcare Professionals: +353 (1) 809 2566 (24 hour service)

Italy Istituto Superiore di Sanità (ISS) +390649906140
CAV "Ospedale Pediatrico Bambino Gesù" – Roma Tel. (+39) 06.6859.3726
CAV "Azienda Ospedaliera Università di Foggia" – Foggia Tel. 800.183.459
CAV "Azienda Ospedaliera A. Cardarelli" – Napoli Tel. (+39) 081.545.3333
CAV Policlinico "Umberto I" – Roma Tel. (+39) 06.4997.8000
CAV Policlinico "A. Gemelli" – Roma Tel. (+39) 06.305.4343
CAV Azienda Ospedaliera "Careggi" U.O. Tossicologia Medica – Firenze Tel. (+39) 055.794.7819
CAV Centro Nazionale di Informazione Tossicologica – Pavia Tel. (+39) 0382.24.444
CAV Ospedale Niguarda – Milano Tel. (+39) 02.66.1010.29
CAV Azienda Ospedaliera Papa Giovanni XXIII – Bergamo Tel. 800.88.33.00
CAV Centro antiveneni Veneto – Verona Tel. 800.011.858

Latvia Latvijas Vides, ģeoloģijas un meteoroloģijas centrs (+371) 67032600

Lithuania Apsinuodijimų informacijos biuras +370 (5) 2362052

Luxembourg Antigifcentrum / Centre antipoisons (+352) 8002 5500

The Netherlands Nationaal Vergiftigingen Informatie +31 (0)88 755 8000

Norway Giftinformasjonen 22 59 13 00

Poland Biuro do spraw Substancji Chemicznych +48 42 2538 400

Portugal Centro de informação antivenenos 800 250 250

Romania Institutul Național de Sănătate Publică +40213183606

Slovakia Národné toxikologické informačné centrum (NTIC) (+421) 2 5477 4166

Slovenia Urad Republike Slovenije za kemikalije +38614006051

Spain Instituto Nacional de Toxicología y Ciencias Forenses (INTCF) (+34) 91 562 04 20

Sweden Giftinformationscentralen (+46) 10 456 6700

Switzerland Tox Info Suisse 24-h-Notfallnummer: 145 (aus dem Ausland: +41 44 251 51 51) Auskunft: +41 44 251 66 66

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· **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)

IATA-DGR: Dangerous Goods Regulations by the "International Air Transport Association" (IATA)

ICAO: International Civil Aviation Organisation

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ICAO-TI: Technical Instructions by the "International Civil Aviation Organisation" (ICAO)

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)

PNEC: Predicted No-Effect Concentration (REACH)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

PBT: Persistent, Bioaccumulative and Toxic

SVHC: Substances of Very High Concern

vPvB: very Persistent and very Bioaccumulative

Flam. Liq. 2: Flammable liquids – Category 2

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

Carc. 1B: Carcinogenicity – Category 1B

STOT SE 3: Specific target organ toxicity (single exposure) – Category 3

· *** Data compared to the previous version altered.**

EU

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Safety data sheet

according to Regulation (EC) No 1907/2006, Article 31

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Annex: Exposure scenario

- **Short title of the exposure scenario**
- **Sector of Use**
 - SU9 Manufacture of fine chemicals
 - SU3 Industrial uses: Uses of substances as such or in preparations at industrial sites
 - SU10 Formulation [mixing] of preparations and/or re-packaging (excluding alloys)
 - SU24 Scientific research and development
- **Product category**
 - PC19 Intermediate
 - 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
 - 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
 - PROC9 Transfer of substance or mixture into small containers (dedicated filling line, including weighing)
 - PROC15 Use as laboratory reagent
- **Environmental release category**
 - ERC1 Manufacture of the substance
 - ERC2 Formulation into mixture
 - ERC4 Use of non-reactive processing aid at industrial site (no inclusion into or onto article)
 - ERC6a Use of intermediate
 - ERC6b Use of reactive processing aid at industrial site (no inclusion into or onto article)
- **Description of the activities / processes covered in the Exposure Scenario**
 - See section 1 of the annex to the Safety Data Sheet.
- **Conditions of use**
- **Duration and frequency** 5 workdays/week.
- **Physical parameters**
- **Physical state** Fluid
- **Concentration of the substance in the mixture** Raw material.
- **Other operational conditions**
- **Other operational conditions affecting environmental exposure** No special measures required.
- **Other operational conditions affecting worker exposure**
 - Avoid contact with eyes.
 - Take precautionary measures against static discharge.
 - Keep away from sources of ignition - No smoking.
- **Other operational conditions affecting consumer exposure** Keep out of the reach of children.
- **Other operational conditions affecting consumer exposure during the use of the product** Not applicable.

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- **Risk management measures**

- **Worker protection**

- **Organisational protective measures** No special measures required.

- **Technical protective measures**

Provide explosion-proof electrical equipment.

Ensure that suitable extractors are available on processing machines

- **Personal protective measures**

Do not inhale gases / fumes / aerosols.

Avoid contact with the eyes.

Tightly sealed goggles

Recommended Filter type: Filter A (acc. to DIN 3181) for vapours of organic compounds

The entrepreneur has to ensure that maintenance, cleaning and testing of respiratory protective devices are carried out according to the instructions of the producer.

These measures have to be properly documented.

In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use self-contained respiratory protective device.

Check protective gloves prior to each use for their proper condition.

The selected protective gloves have to satisfy the specifications of EU Directive 89/686/EEC and the standard EN 374 derived from it.

Protective gloves

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

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

Use personal protective equipment. Avoid breathing vapours, mist or gas. Ensure adequate ventilation.

Remove all sources of ignition. Evacuate personnel to safe areas. Beware of vapours accumulating to form explosive concentrations. Vapours can accumulate in low areas.

For personal protection see section 8.

- **Measures for consumer protection**

Ensure adequate labelling.

Keep locked up and out of the reach of children.

- **Environmental protection measures**

- **Water** No special measures required.

- **Disposal measures** Ensure that waste is collected and contained.

- **Disposal procedures**

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

- **Waste type** Partially emptied and uncleaned packaging

- **Exposure estimation**

- **Consumer** Not relevant for this Exposure Scenario.

- **Guidance for downstream users** No further relevant information available.