

**Safety Data Sheet**

according to UK REACH Regulation

Revision date: 29.09.2021

**Binding Buffer U1**

Product code: OE0017CE

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**SECTION 1: Identification of the substance/mixture and of the company/undertaking****1.1. Product identifier**

Binding Buffer U1

**Further trade names**

Article No. (user):

OE00170040CE

OE00170400CE

OE00170500CE

OE00175000CE

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

specific analysis.

Scientific research and development

**1.3. Details of the supplier of the safety data sheet**

Company name: MolGen B.V.

Street: Kazemat 23

Place: NL-3905NR Veenendaal

Telephone: +31 (0) 85 - 200 7431

Telefax: +31 (0) 85 - 200 6901

e-mail: info@molgen.com

Internet: http://www.molgen.com

**1.4. Emergency telephone number:**

+31 (0) 85 - 200 7431

**SECTION 2: Hazards identification****2.1. Classification of the substance or mixture****GB CLP Regulation**

Hazard categories:

Flammable liquid: Flam. Liq. 2

Serious eye damage/eye irritation: Eye Irrit. 2

Specific target organ toxicity - single exposure: STOT SE 3

Specific target organ toxicity - repeated exposure: STOT RE 2

Hazard Statements:

Highly flammable liquid and vapour.

Causes serious eye irritation.

May cause drowsiness or dizziness.

May cause damage to organs through prolonged or repeated exposure.

**2.2. Label elements****GB CLP Regulation****Hazard components for labelling**

propan-2-ol; isopropyl alcohol; isopropanol

sodium perchlorate, monohydrate

**Signal word:** Danger**Pictograms:****Hazard statements**

H225

Highly flammable liquid and vapour.

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- H319 Causes serious eye irritation.  
H336 May cause drowsiness or dizziness.  
H373 May cause damage to organs through prolonged or repeated exposure.

#### Precautionary statements

- P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.  
P233 Keep container tightly closed.  
P260 Do not breathe dust/fume/gas/mist/vapours/spray.  
P280 Wear protective gloves/protective clothing/eye protection/face protection/hearing protection.  
P403+P235 Store in a well-ventilated place. Keep cool.  
P501 Dispose of waste according to applicable legislation.

#### 2.3. Other hazards

No information available.

### SECTION 3: Composition/information on ingredients

#### 3.2. Mixtures

##### Hazardous components

CAS No	Chemical name			Quantity
	EC No	Index No	REACH No	
	GHS Classification			
67-63-0	propan-2-ol; isopropyl alcohol; isopropanol			50 - < 55 %
	200-661-7	603-117-00-0	01-2119457558-25	
	Flam. Liq. 2, Eye Irrit. 2, STOT SE 3; H225 H319 H336			
7791-07-3	sodium perchlorate, monohydrate			20 - < 25 %
	616-573-0	017-010-00-6		
	Ox. Sol. 1, Acute Tox. 4, Eye Irrit. 2, STOT RE 2; H271 H302 H319 H373			

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

### SECTION 4: First aid measures

#### 4.1. Description of first aid measures

##### General information

When in doubt or if symptoms are observed, get medical advice. If unconscious place in recovery position and seek medical advice. Do not leave affected person unattended.

##### After inhalation

Remove casualty to fresh air and keep warm and at rest. Get medical advice/attention. If breathing is irregular or stopped, administer artificial respiration.

##### After contact with skin

Wash with plenty of water/soap. Immediately remove any contaminated clothing, shoes or stockings. In case of skin reactions, consult a physician.

##### After contact with eyes

After contact with the eyes, rinse with water with the eyelids open for a sufficient length of time, then consult an ophthalmologist immediately. Remove contact lenses, if present and easy to do. Continue rinsing.

##### After ingestion

Observe risk of aspiration if vomiting occurs. Do NOT induce vomiting. If accidentally swallowed rinse the mouth with plenty of water (only if the person is conscious) and obtain immediate medical attention. Never give anything by mouth to an unconscious person or a person with cramps.

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

Irritant, Respiratory complaints, Unconsciousness, Narcotic effects, Headache.  
May cause drowsiness or dizziness. Repeated exposure may cause skin dryness or cracking.

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

Treat symptomatically.

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

Water spray jet, Carbon dioxide (CO<sub>2</sub>), Foam, Extinguishing powder, Nitrogen  
Co-ordinate fire-fighting measures to the fire surroundings.

**5.2. Special hazards arising from the substance or mixture**

Highly flammable. Vapours are heavier than air, spread along floors and form explosive mixtures with air.  
Beware of reignition. In case of fire may be liberated: Gases/vapours, toxic

**5.3. Advice for firefighters**

In case of fire: Wear self-contained breathing apparatus. Full protection suit.

**Additional information**

Use water spray jet to protect personnel and to cool endangered containers. Suppress gases/vapours/mists with water spray jet. Collect contaminated fire extinguishing water separately. Do not allow entering drains or surface water.

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

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

**6.2. Environmental precautions**

Do not allow to enter into surface water or drains. Do not allow to enter into soil/subsoil. Explosion risk.

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

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

**6.4. Reference to other sections**

Safe handling: see section 7  
Personal protection equipment: see section 8  
Disposal: see section 13

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

Provide adequate ventilation. Do not breathe gas/fumes/vapour/spray. Avoid contact with skin, eyes and clothes. Use personal protection equipment. Avoid: Vapour, aerosol or mist formation. Read label before use.

**Advice on protection against fire and explosion**

Keep away from sources of ignition - No smoking. Take precautionary measures against static discharges.  
Vapours are heavier than air, spread along floors and form explosive mixtures with air. Beware of reignition.

**7.2. Conditions for safe storage, including any incompatibilities****Requirements for storage rooms and vessels**

Keep container tightly closed and in a well-ventilated place. Store in a cool dry place. Keep locked up. Store in a place accessible by authorized persons only. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

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#### Hints on joint storage

Do not store together with: Chlorates, Hydrogen peroxide, Nitrogen oxides (NO<sub>x</sub>), Alkali metals, Alkaline earth metal, Aluminium, plastic and rubber, Oil, Oxidizing agent. Pyrophoric or self-heating substances, Oxidising agent, Nitric acid, aldehydes, Amines, sulphuric acid, Iron.

#### Further information on storage conditions

Protect against direct sunlight.

#### 7.3. Specific end use(s)

specific analysis.  
Scientific research and development

### SECTION 8: Exposure controls/personal protection

#### 8.1. Control parameters

##### Exposure limits (EH40)

CAS No	Substance	ppm	mg/m <sup>3</sup>	fibres/ml	Category	Origin
67-63-0	Propan-2-ol	400	999		TWA (8 h)	WEL
		500	1250		STEL (15 min)	WEL

##### DNEL/DMEL values

CAS No	Substance	Exposure route	Effect	Value
67-63-0	propan-2-ol; isopropyl alcohol; isopropanol			
Worker DNEL, long-term		inhalation	systemic	500 mg/m <sup>3</sup>
Worker DNEL, long-term		dermal	systemic	888 mg/kg bw/day

##### PNEC values

CAS No	Substance	Value
67-63-0	propan-2-ol; isopropyl alcohol; isopropanol	
Freshwater		140,9 mg/l
Marine water		140,9 mg/l
Freshwater sediment		552 mg/kg
Marine sediment		552 mg/kg
Micro-organisms in sewage treatment plants (STP)		2251 mg/l
Soil		28 mg/kg

#### 8.2. Exposure controls



##### Appropriate engineering controls

Provide adequate ventilation as well as local exhaust at critical locations. Technical measures and the application of suitable work processes have priority over personal protection equipment.

##### Protective and hygiene measures

Remove contaminated, saturated clothing immediately. Draw up and observe skin protection programme. Wash hands and face before breaks and after work and take a shower if necessary. When using do not eat, drink, smoke, sniff. Do not breathe gas/fumes/vapour/spray. Avoid contact with skin, eyes and clothes. Avoid:

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Vapour, aerosol or mist formation.

**Eye/face protection**

Wear eye/face protection.

**Hand protection**

Wear protective gloves. (EN ISO 374)

Suitable material:

By long-term hand contact:

NBR (Nitrile rubber)

Thickness of the glove material: 0,4 mm

Breakthrough time (maximum wearing time): > 480 min

By short-term hand contact:

CR (polychloroprene, chloroprene rubber)

Thickness of the glove material: 0,65 mm

Breakthrough time (maximum wearing time): > 120 min

When handling with chemical substances, protective gloves must be worn with the CE-label including the four control digits. The quality of the protective gloves resistant to chemicals must be chosen as a function of the specific working place concentration and quantity of hazardous substances. For special purposes, it is recommended to check the resistance to chemicals of the protective gloves mentioned above together with the supplier of these gloves.

**Skin protection**

Flame-retardant protective clothing. Wear anti-static footwear and clothing

**Respiratory protection**

In case of inadequate ventilation wear respiratory protection.

Respiratory protection necessary at: Vapour, aerosol or mist formation

Filtering device (full mask or mouthpiece) with filter: A (DIN 3181)

**Environmental exposure controls**

Do not allow to enter into surface water or drains. Do not allow to enter into soil/subsoil. Explosion risk.

**SECTION 9: Physical and chemical properties****9.1. Information on basic physical and chemical properties**

Physical state:	Liquid
Colour:	transparent, colourless
Odour:	like: Alcohol
pH-Value:	not determined

**Changes in the physical state**

Melting point/freezing point:	not determined
Boiling point or initial boiling point and boiling range:	(Isopropanol) 82 - 83 °C
Flash point:	(Isopropanol) 12 °C

**Flammability**

Solid:	not applicable
Gas:	not applicable

**Explosive properties**

Vapours can form explosive mixtures with air.

Lower explosion limits:	(Isopropanol) 2 vol. %
Upper explosion limits:	(Isopropanol) 13,4 vol. %

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Auto-ignition temperature: (Isopropanol) 425 °C

**Self-ignition temperature**

Solid: not applicable

Gas: not applicable

Decomposition temperature: not determined

**Oxidizing properties**

Not oxidising.

Vapour pressure: (Isopropanol) 43 hPa  
(at 20 °C)Vapour pressure: (Isopropanol) 229 hPa  
(at 50 °C)Density: 1,03 g/cm<sup>3</sup>

Water solubility: miscible

**Solubility in other solvents**

not determined

Partition coefficient n-octanol/water: not determined

Viscosity / dynamic: not determined

Viscosity / kinematic: not determined

Relative vapour density: not determined

Evaporation rate: not determined

**9.2. Other information**

No information available.

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

Highly flammable.

**10.2. Chemical stability**

The product is stable under storage at normal ambient temperatures.

**10.3. Possibility of hazardous reactions**

Vapours can form explosive mixtures with air.

Reaction with: Alkali metals, Alkaline earth metal, Aluminium

(Ignition hazard. Formation of: Gases/vapours, flammable)

Exothermic reaction with: Oxidising agent, Nitric acid, aldehydes, Amines, sulphuric acid, Iron.

Explosion hazard with: Chlorates, Hydrogen peroxide, Nitrogen oxides (NO<sub>x</sub>)**10.4. Conditions to avoid**

Keep away from sources of heat (e.g. hot surfaces), sparks and open flames. Protect against direct sunlight.

**10.5. Incompatible materials**Chlorates, Hydrogen peroxide, Nitrogen oxides (NO<sub>x</sub>), Alkali metals, Alkaline earth metal, Aluminium, plastic and rubber, Oil, Oxidizing agent. Pyrophoric or self-heating substances, Oxidising agent, Nitric acid, aldehydes, Amines, sulphuric acid, Iron.**10.6. Hazardous decomposition products**

In case of fire may be liberated: Gases/vapours, toxic

**SECTION 11: Toxicological information****11.1. Information on toxicological effects****Acute toxicity**

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

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CAS No	Chemical name				
	Exposure route	Dose	Species	Source	Method
67-63-0	propan-2-ol; isopropyl alcohol; isopropanol				
	oral	LD50 mg/kg	5045	Rat	Manufacturer
	dermal	LD50 mg/kg	12800	Rabbit	Manufacturer
	inhalation (4 h) vapour	LC50	37,5 mg/l	Rat	Manufacturer
7791-07-3	sodium perchlorate, monohydrate				
	oral	ATE mg/kg	500		

### Irritation and corrosivity

Causes serious eye irritation.

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

### Sensitising effects

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

### Carcinogenic/mutagenic/toxic effects for reproduction

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

### STOT-single exposure

May cause drowsiness or dizziness. (propan-2-ol; isopropyl alcohol; isopropanol)

### STOT-repeated exposure

May cause damage to organs through prolonged or repeated exposure. (sodium perchlorate, monohydrate)

### Aspiration hazard

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

### Practical experience

### Other observations

Irritant, Respiratory complaints, Unconsciousness, Narcotic effects, Headache.

Repeated exposure may cause skin dryness or cracking.

## SECTION 12: Ecological information

### 12.1. Toxicity

The product is not: Ecotoxic.

CAS No	Chemical name					
	Aquatic toxicity	Dose	[h]   [d]	Species	Source	Method
67-63-0	propan-2-ol; isopropyl alcohol; isopropanol					
	Acute fish toxicity	LC50 mg/l	96 h	Pimephales promelas (fathead minnow)	vendor	

### 12.2. Persistence and degradability

The product has not been tested.

CAS No	Chemical name			
	Method	Value	d	Source
	Evaluation			
67-63-0	propan-2-ol; isopropyl alcohol; isopropanol			
	oxygen depletion	53 %	5	
	biotic/abiotic	95 %	21	

### 12.3. Bioaccumulative potential

The product has not been tested.

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#### Partition coefficient n-octanol/water

CAS No	Chemical name	Log Pow
67-63-0	propan-2-ol; isopropyl alcohol; isopropanol	0,05

#### 12.4. Mobility in soil

The product has not been tested.

#### 12.5. Results of PBT and vPvB assessment

The product has not been tested.

#### 12.6. Other adverse effects

No information available.

#### Further information

Avoid release to the environment.

### SECTION 13: Disposal considerations

#### 13.1. Waste treatment methods

##### Disposal recommendations

Do not allow to enter into surface water or drains. Dispose of waste according to applicable legislation.

##### Contaminated packaging

Hazardous waste according to Directive 2008/98/EC (waste framework directive). Handle contaminated packages in the same way as the substance itself.

### SECTION 14: Transport information

#### Land transport (ADR/RID)

<b>14.1. UN number:</b>	UN 1993
<b>14.2. UN proper shipping name:</b>	FLAMMABLE LIQUID, N.O.S.
<b>14.3. Transport hazard class(es):</b>	3
<b>14.4. Packing group:</b>	II
Hazard label:	3



Classification code:	F1
Special Provisions:	274 601
Limited quantity:	5 L
Excepted quantity:	E1
Transport category:	3
Hazard No:	30
Tunnel restriction code:	D/E

#### Inland waterways transport (ADN)

<b>14.1. UN number:</b>	UN 1993
<b>14.2. UN proper shipping name:</b>	FLAMMABLE LIQUID, N.O.S.
<b>14.3. Transport hazard class(es):</b>	3
<b>14.4. Packing group:</b>	II
Hazard label:	3



Classification code:	F1
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Special Provisions: 274 601  
 Limited quantity: 5 L  
 Excepted quantity: E1

### Marine transport (IMDG)

**14.1. UN number:** UN 1993  
**14.2. UN proper shipping name:** FLAMMABLE LIQUID, N.O.S.  
**14.3. Transport hazard class(es):** 3  
**14.4. Packing group:** II  
 Hazard label: 3



Special Provisions: 274  
 Limited quantity: 1 L  
 Excepted quantity: E2  
 EmS: F-E, S-E

### Air transport (ICAO-TI/IATA-DGR)

**14.1. UN number:** UN 1993  
**14.2. UN proper shipping name:** FLAMMABLE LIQUID, N.O.S.  
**14.3. Transport hazard class(es):** 3  
**14.4. Packing group:** II  
 Hazard label: 3



Special Provisions: A3  
 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

Warning: flammable liquids.

### 14.7. Transport in bulk according to Annex II of Marpol and the IBC Code

not applicable

## 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

2010/75/EU (VOC): < 61 %

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

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#### 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

Chemical safety assessments for substances in this mixture were not carried out.

### SECTION 16: Other information

#### Abbreviations and acronyms

CLP: Classification, labelling and Packaging  
REACH: Registration, Evaluation and Authorization of Chemicals  
GHS: Globally Harmonised System of Classification, Labelling and Packaging of Chemicals  
UN: United Nations  
CAS: Chemical Abstracts Service  
DNEL: Derived No Effect Level  
DMEL: Derived Minimal Effect Level  
PNEC: Predicted No Effect Concentration  
ATE: Acute toxicity estimate  
LC50: Lethal concentration, 50%  
LD50: Lethal dose, 50%  
LL50: Lethal loading, 50%  
EL50: Effect loading, 50%  
EC50: Effective Concentration 50%  
ErC50: Effective Concentration 50%, growth rate  
NOEC: No Observed Effect Concentration  
BCF: Bio-concentration factor  
PBT: persistent, bioaccumulative, toxic  
vPvB: very persistent, very bioaccumulative  
MARPOL: International Convention for the Prevention of Marine Pollution from Ships  
IBC: Intermediate Bulk Container  
VOC: Volatile Organic Compounds  
SVHC: Substance of Very High Concern  
For abbreviations and acronyms, see table at <http://abbrev.esdscom.eu>

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

Classification	Classification procedure
Flam. Liq. 2; H225	On basis of test data
Eye Irrit. 2; H319	Calculation method
STOT SE 3; H336	Calculation method
STOT RE 2; H373	Calculation method

#### Relevant H and EUH statements (number and full text)

H225 Highly flammable liquid and vapour.  
H271 May cause fire or explosion; strong oxidiser.  
H302 Harmful if swallowed.  
H319 Causes serious eye irritation.  
H336 May cause drowsiness or dizziness.  
H373 May cause damage to organs (thyroid gland) through prolonged or repeated exposure.  
H373 May cause damage to organs through prolonged or repeated exposure.

#### Further Information

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

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