

06/19/2023	Kit Components
Product code	Description
D5049	EZ DNA Methylation-Lightning Automation Kit
Components:	
D5030-1	Lightning Conversion Reagent
D5001-3	M-Binding Buffer
D5001-4	M-Wash Buffer (Concentrate)
D5030-5	L-Desulphonation Buffer
D5001-6	M-Elution Buffer
D4100-5-4, D4100-5-8	EZ-Methylation Magprep Beads



Printing date 06/19/2023

Reviewed on 03/15/2021

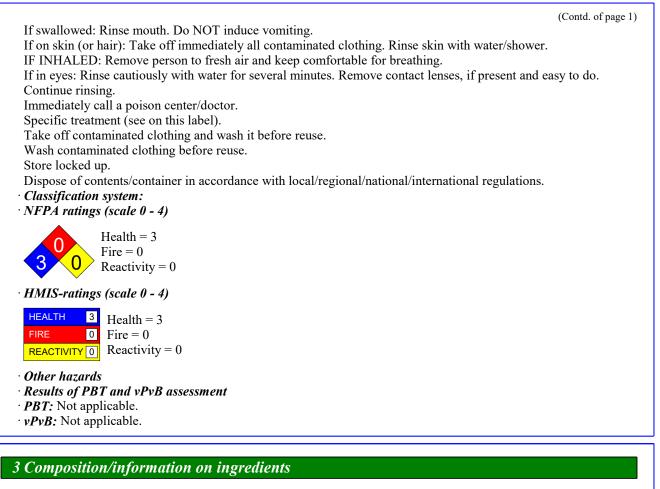
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<ul> <li>1 Identification</li> <li>Product identifier</li> <li>Product identifier</li> <li>Product identifier</li> <li>Product identifier</li> <li>Application of the substance / the mixture Laboratory Reagent</li> <li>Details of the supplier of the safety data sheet</li> <li>Manufacturer/Supplier; Tymo Research Corp.</li> <li>Proto Xumpby Ave., Irvine, CA 92614, U.S.A., Phone: +1(949) 679-1190 or +1(888) 882-9682, sds@zymoresearch.com</li> <li>Information department: Product Safety Dept.</li> <li>Prergency telephone number:</li> <li>During normal business hours (8 am to 5 pm Pacific Standard Time): +1 (949) 679 1190</li> <li>Classification of the substance or mixture</li> <li>We for the substance or mixture</li> <li>GliSOS Corrosion</li> <li>Skin Corrosion 1C H314 Causes severe skin burns and eye damage.</li> <li>Eye Damage 1 H318 Causes serious eye damage.</li> <li>We for Safety Dermal 4 H302 Harmful if swallowed.</li> <li>Acute Toxicity - Oral 4 H302 Harmful if inhaled.</li> <li>Acute Toxicity - Dermal 4 H312 Harmful if inhaled.</li> <li>Acute Toxicity - Internet to Education 4 H332 Harmful if inhaled.</li> <li>Acute Toxicity - Internet to Education 5 (Bis) (Sig) (S</li></ul>	1 mining duice 00/17/2025	
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Reviewed on 03/15/2021

#### Trade name: Lightning Conversion Reagent



• Chemical characterization: Mixtures

• Description: Mixture of the substances listed below with nonhazardous additions.

· Dangerous components:

CAS: 10192-30-0 Ammonium bisulfite 45% aqueous solution

≤70%

### 4 First-aid measures

· Description of first aid measures

• General information:

Symptoms of poisoning may even occur after several hours; therefore medical observation for at least 48 hours after the accident.

- After inhalation: Move to fresh air environment. Contact a physician if breathing becomes difficult.
- · After skin contact: Immediately wash with water and soap and rinse thoroughly.
- · After eye contact:

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

Wash eyes immediately, for at least 15 minutes, with large amounts of water, holding upper and lower lids open. Remove contact lenses, if present and it is easy to do so. Get medical attention immediately.

• After swallowing:

Do not induce vomiting; immediately call for medical help.

Immediately call a doctor.

Drink copious amounts of water and provide fresh air. Immediately call a doctor.

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#### Trade name: Lightning Conversion Reagent

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- Information for doctor:
- · Most important symptoms and effects, both acute and delayed No further relevant information available.
- Indication of any immediate medical attention and special treatment needed
- No further relevant information available.

### 5 Fire-fighting measures

- · Extinguishing media
- Suitable extinguishing agents:

CO2, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam. Use fire fighting measures that suit the environment.

CO2, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam. • *Advice for firefighters* 

• Protective equipment: Wear self-contained breathing apparatus for fighting fires involving this material

### 6 Accidental release measures

• *Personal precautions, protective equipment and emergency procedures* Wear self-contained breathing apparatus for responding to non-incidental release of this material in which there is the potential for inhalation of vapors, mists or sprays

· Environmental precautions:

Dilute with plenty of water.

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

· 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.
- Protective Action Criteria for Chemicals

#### • PAC-1:

All components have the value 30 mg/m<sup>3</sup>.

• PAC-2:

All components have the value  $330 \text{ mg/m}^3$ .

• PAC-3:

All components have the value 2,000 mg/m<sup>3</sup>.

# 7 Handling and storage

· Handling:

· Precautions for safe handling

Ensure good ventilation/exhaustion at the workplace.

- Prevent formation of aerosols.
- · Information about protection against explosions and fires: No special measures required.
- · Conditions for safe storage, including any incompatibilities

· Storage:

· Requirements to be met by storerooms and receptacles: No special requirements.

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#### Trade name: Lightning Conversion Reagent

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- · Information about storage in one common storage facility: Do not store together with acids or strong oxidizers
- Further information about storage conditions: Keep receptacle tightly sealed.
- · Specific end use(s) Laboratory reagent

### 8 Exposure controls/personal protection

· Additional information about design of technical systems: No further data; see section 7.

- · Control parameters
- Components with limit values that require monitoring at the workplace:

The product does not contain any relevant quantities of materials with critical values that have to be monitored at the workplace.

- Additional information: The lists that were valid during the creation were used as basis.
- · Exposure controls
- · 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.
- Avoid contact with the eyes and skin.
- Breathing equipment:

In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use respiratory protective device that is independent of circulating air.

· Protection of hands:



Protective gloves

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  $\cdot$  *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. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.

· 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

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(Contd. of page 4)

Physical and chemical proper	rties
Information on basic physical and	chemical properties
· General Information	enemieur properties
Appearance:	
Form:	Liquid
Color:	Clear light yellow
Odor:	Pungent
Odor threshold:	Not determined.
pH-value at 20 °C (68 °F):	<6
Change in condition	
Melting point/Melting range:	Undetermined.
Boiling point/Boiling range:	Undetermined.
Flash point:	Not applicable.
Flammability (solid, gaseous):	Not applicable.
Decomposition temperature:	Not determined.
Ignition temperature:	Product is not selfigniting.
Danger of explosion:	Product does not present an explosion hazard.
Explosion limits:	
Lower:	Not Applicable
Upper:	Not Applicable
Vapor pressure:	Not determined.
Density:	Not determined.
Relative density	Not determined.
Vapor density	Not determined.
Evaporation rate	Not determined.
Solubility in / Miscibility with	
Water:	Fully miscible.
Partition coefficient (n-octanol/wat	ter): Not determined.
Viscosity:	
Dynamic:	Not determined.
Kinematic:	Not determined.
Solvent content:	
VOC content:	0.00 %
	0.0 g/l / 0.00 lb/gal
Solids content:	0.0 %
Other information	No further relevant information available.

# 10 Stability and reactivity

· Reactivity No further relevant information available.

Chemical stability

• Thermal decomposition / conditions to be avoided: No decomposition if used according to specifications.

- · Possibility of hazardous reactions Contact with acids releases toxic gases.
- · Conditions to avoid No further relevant information available.

(Contd. on page 6)

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Trade name: Lightning Conversion Reagent

- · *Incompatible materials:* No further relevant information available.
- · Hazardous decomposition products: No dangerous decomposition products known.

### 11 Toxicological information

· Information on toxicological effects

• Acute toxicity:

Primary irritant effect:

- · on the skin: Irritant to skin and mucous membranes.
- · on the eye: Irritating effect.
- Sensitization: No sensitizing effects known.
- Additional toxicological information:

The product shows the following dangers according to internally approved calculation methods for preparations: Harmful

Irritant

#### · Carcinogenic categories

· IARC (International Agency for Research on Cancer)

None of the ingredients is listed.

#### · NTP (National Toxicology Program)

None of the ingredients is listed.

#### · OSHA-Ca (Occupational Safety & Health Administration)

None of the ingredients is listed.

## **12** Ecological information

· Toxicity

- Aquatic toxicity: No further relevant information available.
- · Persistence and degradability No further relevant information available.
- · Behavior in environmental systems:
- · Bioaccumulative potential No further relevant information available.
- · Mobility in soil No further relevant information available.
- Additional ecological information:
- · General notes:
- Water hazard class 2 (Self-assessment): hazardous for water

Do not allow product to reach ground water, water course or sewage system. Danger to drinking water if even small quantities leak into the ground.

- Results of PBT and vPvB assessment
- *Results of PBT and VPvB asse* • *PBT:* **Not applicable.**
- **PBI:** Not applicable.
- *vPvB*: Not applicable.
- · Other adverse effects No further relevant information available.

# 13 Disposal considerations

- · Waste treatment methods
- · Recommendation:

Dispose of contents in accordance with local/regional/national, and international recommendations.

(Contd. on page 7)

(Contd. of page 5)

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Trade name: Lightning Conversion Reagent

(Contd. of page 6)

· Uncleaned packagings:

· Recommendation:

Printing date 06/19/2023

Dispose of container in acoordance with local/regional/national and international recommendations. • *Recommended cleansing agent:* Water, if necessary with cleansing agents.

UN-Number	
DOT, IMDG, IATA	UN3265
UN proper shipping name	
DOT	Corrosive liquid, acidic, organic, n.o.s. (Ammonium bisulfite 45
MDC LITI	aqueous solution)
IMDG, IATA	CORROSIVE LIQUID, ACIDIC, ORGANIC, N.O.S. (Ammonium bisulfite 45% aqueous solution)
Transport hazard class(es)	(Animonium ofsume 4570 aqueous solution)
DOT	
the state	
CORROSIVE	
8	
Class	8 Corrosive substances
Label	8
IMDG, IATA	
B B B B B B B B B B B B B B B B B B B	
Class	8 Corrosive substances
Label	8
Packing group	
DOT, IMDG, IATA	III
Environmental hazards:	Not applicable.
Special precautions for user	Warning: Corrosive substances
Hazard identification number (Kemler co	
EMS Number:	F-A,S-B (SCC1) Acida
Segregation groups	(SGG1) Acids
Stowage Category Stowage Code	A SW2 Clear of living quarters.
0	
Transport in bulk according to Annex II MARPOL73/78 and the IBC Code	Not applicable.
Transport/Additional information:	-
DOT	
Quantity limitations	On passenger aircraft/rail: 5 L
~ ~	On cargo aircraft only: 60 L

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Trade name: Lightning Conversion Reagent

(Contd. of page 7)

· IMDG · Limited quantities (LQ) · Excepted quantities (EQ)	5L Code: E1 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 1000 ml
· UN "Model Regulation":	UN 3265 CORROSIVE LIQUID, ACIDIC, ORGANIC, N.O.S. (AMMONIUM BISULFITE 45% AQUEOUS SOLUTION), 8, III

## 15 Regulatory information

 $\cdot$  Safety, health and environmental regulations/legislation specific for the substance or mixture No further relevant information available.

· Sara

• Section 355 (extremely hazardous substances):

None of the ingredients is listed.

• Section 313 (Specific toxic chemical listings):

None of the ingredients is listed.

• TSCA (Toxic Substances Control Act):

All components have the value ACTIVE.

Hazardous Air Pollutants

None of the ingredients is listed.

· Proposition 65

• Chemicals known to cause cancer:

None of the ingredients is listed.

· Chemicals known to cause reproductive toxicity for females:

None of the ingredients is listed.

· Chemicals known to cause reproductive toxicity for males:

None of the ingredients is listed.

• Chemicals known to cause developmental toxicity:

None of the ingredients is listed.

#### · Carcinogenic categories

· EPA (Environmental Protection Agency)

None of the ingredients is listed.

• TLV (Threshold Limit Value)

None of the ingredients is listed.

·NIOSH-Ca (National Institute for Occupational Safety and Health)

None of the ingredients is listed.

· GHS label elements The product is classified and labeled according to the Globally Harmonized System (GHS).

· Hazard pictograms GHS05, GHS07

· Signal word Danger

· Hazard-determining components of labeling:

Ammonium bisulfite 45% aqueous solution

• Hazard statements

Harmful if swallowed, in contact with skin or if inhaled.

(Contd. on page 9)

US

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#### Trade name: Lightning Conversion Reagent

(Contd. of page 8) Causes severe skin burns and eye damage. Precautionary statements Do not breathe dusts or mists. Wash thoroughly after handling. Do not eat, drink or smoke when using this product. Use only outdoors or in a well-ventilated area. Wear protective gloves/protective clothing/eye protection/face protection. If swallowed: Call a poison center/doctor if you feel unwell. If swallowed: Rinse mouth. Do NOT induce vomiting. If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower. IF INHALED: Remove person to fresh air and keep comfortable for breathing. If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a poison center/doctor. Specific treatment (see on this label). Take off contaminated clothing and wash it before reuse. Wash contaminated clothing before reuse. Store locked up. Dispose of contents/container in accordance with local/regional/national/international regulations. · Chemical safety assessment: A Chemical Safety Assessment has not been carried out.

### 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:

Zymo Research Corp. Safety Department 17062 Murphy Ave. Irvine, CA 92614 USA Phone: 1-949-679-1190 or 1-888-882-9682 · Contact: sds@zymoresearch.com · Date of preparation / last revision 06/19/2023 · Abbreviations and acronyms: 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 DOT: US Department of Transportation IATA: International Air Transport Association EINECS: European Inventory of Existing Commercial Chemical Substances ELINCS: European List of Notified Chemical Substances CAS: Chemical Abstracts Service (division of the American Chemical Society) NFPA: National Fire Protection Association (USA) HMIS: Hazardous Materials Identification System (USA) VOC: Volatile Organic Compounds (USA, EU) PBT: Persistent, Bioaccumulative and Toxic vPvB: very Persistent and very Bioaccumulative NIOSH: National Institute for Occupational Safety OSHA: Occupational Safety & Health TLV: Threshold Limit Value PEL: Permissible Exposure Limit REL: Recommended Exposure Limit Acute Toxicity - Oral 4: Acute toxicity - Category 4 Skin Corrosion 1C: Skin corrosion/irritation - Category 1C Eye Damage 1: Serious eye damage/eye irritation - Category 1



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Reviewed on 03/15/2021

Identification	
Product identifier	
Trade name: M-Bin	ding Buffer
	001-3, D5002-3, D5005-3, D5006-3, D5040-3, D5049-3 ubstance / the mixture Laboratory Reagent
Manufacturer/Supp. Zymo Research Corp	o. , Irvine, CA 92614, U.S.A., Phone: +1(949) 679-1190 or +1(888) 882-9682,
Emergency telephon	<i>nent:</i> Product Safety Dept. <i>ne number:</i> ess hours (8 am to 5 pm Pacific Standard Time): +1 (949) 679 1190
Hazard(s) identij	fication
	substance or mixture
	substance of mixture
GHS07	
Acute Toxicity - Ora	14 H302 Harmful if swallowed.
Skin Irritation 2	H315 Causes skin irritation.
Eye Irritation 2A	H319 Causes serious eye irritation.
Label elements GHS label elements Hazard pictograms Signal word Warnin	
Hazard-determining	components of labeling:
guanidinium chloride	2
<i>Hazard statements</i> Harmful if swallowed	d.
Causes skin irritation	
Causes serious eye in	
<b>Precautionary states</b> Wash thoroughly after	
	smoke when using this product.
Wear eye protection	/ face protection.
If swallowed, Call a	poison center/doctor if you feel unwell.
	n plenty of water
Rinse mouth.	
Rinse mouth. If on skin: Wash with	
Rinse mouth. If on skin: Wash with Specific treatment (s If in eyes: Rinse caut	
Rinse mouth. If on skin: Wash with Specific treatment (s If in eyes: Rinse caut Continue rinsing.	ee on this label).

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#### Trade name: M-Binding Buffer

If eye irritation persists: Get medical advice/attention. Dispose of contents/container in accordance with local/regional/national/international regulations. • <i>Classification system:</i> • <i>NFPA ratings (scale 0 - 4)</i>	(Contd. of page 1)
$\begin{array}{c} 0 \\ 2 \\ 0 \\ $	
HMIS-ratings (scale 0 - 4)	
HEALTH2FIRE0Fire = 0REACTIVITYReactivity = 0	
<ul> <li>Other hazards</li> <li>Results of PBT and vPvB assessment</li> <li>PBT: Not applicable.</li> <li>vPvB: Not applicable.</li> </ul>	
3 Composition/information on ingredients	
· Chemical characterization: Mixtures	

• Description: Mixture of the substances listed below with nonhazardous additions.

#### · Dangerous components:

CAS: 50-01-1 guanidinium chloride

# 4 First-aid measures

· Description of first aid measures

• General information:

Symptoms of poisoning may even occur after several hours; therefore medical observation for at least 48 hours after the accident.

- · After inhalation: Supply fresh air; consult doctor in case of complaints.
- After skin contact: Immediately wash with water and soap and rinse thoroughly.
- After eye contact:

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

Wash eyes immediately, for at least 15 minutes, with large amounts of water, holding upper and lower lids open. Remove contact lenses, if present and it is easy to do so. Get medical attention immediately.

#### • After swallowing:

Do not induce vomiting; immediately call for medical help.

Immediately call a doctor.

Drink copious amounts of water and provide fresh air. Immediately call a doctor.

- <sup>•</sup> Information for doctor:
- · Most important symptoms and effects, both acute and delayed No further relevant information available.
- · Indication of any immediate medical attention and special treatment needed
- No further relevant information available.

(Contd. on page 3)

≤60%

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Trade name: M-Binding Buffer

(Contd. of page 2)

## 5 Fire-fighting measures

- · Extinguishing media
- Suitable extinguishing agents:

CO2, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam. Use fire fighting measures that suit the environment.

- · Advice for firefighters
- · Protective equipment: Wear protective clothing.

### 6 Accidental release measures

- · Personal precautions, protective equipment and emergency procedures Wear protective clothing.
- Environmental precautions:

Dilute with plenty of water.

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

• *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.

• 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.
- · Protective Action Criteria for Chemicals

• PAC-1:

All components have the value 1.4 mg/m<sup>3</sup>.

· PAC-2:

All components have the value  $16 \text{ mg/m}^3$ .

• PAC-3:

All components have the value 94 mg/m<sup>3</sup>.

### 7 Handling and storage

- · Handling:
- · Precautions for safe handling

Ensure good ventilation/exhaustion at the workplace.

- Prevent formation of aerosols.
- · Information about protection against explosions and fires: No special measures required.
- · Conditions for safe storage, including any incompatibilities

· Storage:

- Requirements to be met by storerooms and receptacles: No special requirements.
- · Information about storage in one common storage facility: Not required.
- Further information about storage conditions: Keep receptacle tightly sealed.
- · Specific end use(s) Laboratory reagent

### 8 Exposure controls/personal protection

· Additional information about design of technical systems: No further data; see section 7.

(Contd. on page 4)

Printing date 06/19/2023

#### Trade name: M-Binding Buffer

- · Control parameters
- Components with limit values that require monitoring at the workplace:
- The product does not contain any relevant quantities of materials with critical values that have to be monitored at the workplace.
- Additional information: The lists that were valid during the creation were used as basis.
- · Exposure controls
- · 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.
- Avoid contact with the eyes and skin.
- Breathing equipment:

In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use respiratory protective device that is independent of circulating air.

Protection of hands:



Protective gloves

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  $\cdot$  *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. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.

#### · 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

Information on basic physical and General Information	chemical properties	
· Appearance: Form:	Liquid	
Form: Color:	Clear	
· Odor:	undistinguishable	
Odor threshold:	Not determined.	
pH-value:	Not determined.	
· Change in condition		
Melting point/Melting range:	Undetermined.	

Reviewed on 03/15/2021

Printing date 06/19/2023

Reviewed on 03/15/2021

Trade name: M-Binding Buffer

		(Contd. of page 4)
Boiling point/Boiling range:	Undetermined.	
· Flash point:	Not applicable.	
· Flammability (solid, gaseous):	Not applicable.	
• Decomposition temperature:	Not determined.	
· Ignition temperature:	Product is not selfigniting.	
Danger of explosion:	Product does not present an explosion hazard.	
· Explosion limits:		
Lower:	Not Applicable	
Upper:	Not Applicable	
· Vapor pressure:	Not determined.	
· Density:	Not determined.	
· Relative density	Not determined.	
· Vapor density	Not determined.	
· Evaporation rate	Not determined.	
· Solubility in / Miscibility with		
Water:	Fully miscible.	
· Partition coefficient (n-octanol/wat	er): Not determined.	
· Viscosity:		
Dynamic:	Not determined.	
Kinematic:	Not determined.	
· Solvent content:		
VOC content:	0.00 %	
	0.0 g/l / 0.00 lb/gal	
Solids content:	30.0 %	
• Other information	No further relevant information available.	

# 10 Stability and reactivity

· *Reactivity* No further relevant information available.

- · Chemical stability
- Thermal decomposition / conditions to be avoided: No decomposition if used according to specifications.
- · Possibility of hazardous reactions No dangerous reactions known.
- · Conditions to avoid No further relevant information available.
- · Incompatible materials: No further relevant information available.
- · Hazardous decomposition products: No dangerous decomposition products known.

## 11 Toxicological information

- · Information on toxicological effects
- Acute toxicity:
- · LD/LC50 values that are relevant for classification:

CAS: 50-01-1 guanidinium chloride

Oral LD50 475 mg/kg (rat)

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Reviewed on 03/15/2021

#### Trade name: M-Binding Buffer

(Contd. of page 5)

• Primary irritant effect:

• on the skin: Irritant to skin and mucous membranes.

· on the eye: Irritating effect.

• Sensitization: No sensitizing effects known.

· Additional toxicological information:

The product shows the following dangers according to internally approved calculation methods for preparations: Harmful

Irritant

· Carcinogenic categories

· IARC (International Agency for Research on Cancer)

None of the ingredients is listed.

· NTP (National Toxicology Program)

None of the ingredients is listed.

· OSHA-Ca (Occupational Safety & Health Administration)

None of the ingredients is listed.

## 12 Ecological information

· Toxicity

- · Aquatic toxicity: No further relevant information available.
- · Persistence and degradability No further relevant information available.
- · Behavior in environmental systems:
- · Bioaccumulative potential No further relevant information available.
- · Mobility in soil No further relevant information available.
- Additional ecological information:
- · General notes:

Water hazard class 1 (Self-assessment): slightly hazardous for water

Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.

- Results of PBT and vPvB assessment
- · **PBT:** Not applicable.
- *vPvB*: Not applicable.
- · Other adverse effects No further relevant information available.

## 13 Disposal considerations

· Waste treatment methods

· Recommendation:

Dispose of contents in accordance with local/regional/national, and international recommendations.

- · Uncleaned packagings:
- · Recommendation:

Dispose of container in acoordance with local/regional/national and international recommendations. • *Recommended cleansing agent:* Water, if necessary with cleansing agents.

## 14 Transport information

· UN-Number

· DOT, ADN, IMDG, IATA

not regulated

(Contd. on page 7)

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Reviewed on 03/15/2021

Trade name: M-Binding Buffer

		(Contd. of page 6)
· UN proper shipping name · DOT, ADN, IMDG, IATA	not regulated	
· Transport hazard class(es)		
· DOT, ADN, IMDG, IATA		
· Class	not regulated	
· Packing group · DOT, IMDG, IATA	not regulated	
· Environmental hazards:	Not applicable.	
· Special precautions for user	Not applicable.	
• Transport in bulk according to Annex MARPOL73/78 and the IBC Code	<i>II of</i> Not applicable.	
· UN "Model Regulation":	not regulated	

# 15 Regulatory information

• Safety, health and environmental regulations/legislation specific for the substance or mixture No further relevant information available.

•	Sara
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· Section 355 (extremely hazardous substances):
None of the ingredients is listed.
· Section 313 (Specific toxic chemical listings):
None of the ingredients is listed.
· TSCA (Toxic Substances Control Act):
All components have the value ACTIVE.
· Hazardous Air Pollutants
None of the ingredients is listed.
· Proposition 65
· Chemicals known to cause cancer:
None of the ingredients is listed.
· Chemicals known to cause reproductive toxicity for females:
None of the ingredients is listed.
· Chemicals known to cause reproductive toxicity for males:
None of the ingredients is listed.
· Chemicals known to cause developmental toxicity:
None of the ingredients is listed.
· Carcinogenic categories
· EPA (Environmental Protection Agency)
None of the ingredients is listed.
· TLV (Threshold Limit Value)
None of the ingredients is listed.
· NIOSH-Ca (National Institute for Occupational Safety and Health)
None of the ingredients is listed.
(Contd. on page 8)
- US

Printing date 06/19/2023

Reviewed on 03/15/2021

Trade name: M-Binding Buffer

• GHS label elements T • Hazard pictograms GI • Signal word Warning	(Contd. of page 7) he product is classified and labeled according to the Globally Harmonized System (GHS). HS07
Signal word warning	
• Hazard-determining c	omponents of labeling:
guanidinium chloride	
• Hazard statements	
Harmful if swallowed.	
Causes skin irritation.	
Causes serious eye irri	tation.
· Precautionary stateme	
Wash thoroughly after	
	noke when using this product.
Wear eye protection / f	
	bison center/doctor if you feel unwell.
Rinse mouth.	
If on skin: Wash with p	plenty of water.
Specific treatment (see	
	busy with water for several minutes. Remove contact lenses, if present and easy to do.
Continue rinsing.	
	: Get medical advice/attention.
	clothing and wash it before reuse.
	s: Get medical advice/attention.
	ntainer in accordance with local/regional/national/international regulations.
	sment: A Chemical Safety Assessment has not been carried out.
6 Other information	
This information is bas	sed on our present knowledge. However, this shall not constitute a guarantee for any specific nall not establish a legally valid contractual relationship.
This information is bas product features and sh	sed on our present knowledge. However, this shall not constitute a guarantee for any specific nall not establish a legally valid contractual relationship.
This information is bas product features and sh • <i>Department issuing St</i>	sed on our present knowledge. However, this shall not constitute a guarantee for any specific nall not establish a legally valid contractual relationship.
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This information is bas product features and sh • <b>Department issuing St</b> Zymo Research Corp. Safety Department	sed on our present knowledge. However, this shall not constitute a guarantee for any specific nall not establish a legally valid contractual relationship.
This information is bas product features and sh • <b>Department issuing S</b> Zymo Research Corp. Safety Department 17062 Murphy Ave.	sed on our present knowledge. However, this shall not constitute a guarantee for any specific nall not establish a legally valid contractual relationship.
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This information is bas product features and sh Department issuing Sh Zymo Research Corp. Safety Department 17062 Murphy Ave. Irvine, CA 92614 USA Phone: 1-949-679-119	sed on our present knowledge. However, this shall not constitute a guarantee for any specific nall not establish a legally valid contractual relationship.
This information is bas product features and sh • <b>Department issuing Sh</b> Zymo Research Corp. Safety Department 17062 Murphy Ave. Irvine, CA 92614 USA Phone: 1-949-679-119 • <b>Contact:</b> sds@zymores	sed on our present knowledge. However, this shall not constitute a guarantee for any specific hall not establish a legally valid contractual relationship. <b>DS:</b> 0 or 1-888-882-9682 search.com
This information is bas product features and sh • <b>Department issuing SL</b> Zymo Research Corp. Safety Department 17062 Murphy Ave. Irvine, CA 92614 USA Phone: 1-949-679-119 • <b>Contact:</b> sds@zymores • <b>Date of preparation</b> / <i>I</i>	sed on our present knowledge. However, this shall not constitute a guarantee for any specific hall not establish a legally valid contractual relationship. <b>DS:</b> 0 or 1-888-882-9682 search.com <b>Jast revision</b> 06/19/2023
This information is bas product features and sh • <b>Department issuing SL</b> Zymo Research Corp. Safety Department 17062 Murphy Ave. Irvine, CA 92614 USA Phone: 1-949-679-119 • <b>Contact:</b> sds@zymores • <b>Date of preparation / I</b> • <b>Abbreviations and acr</b>	<ul> <li>add on our present knowledge. However, this shall not constitute a guarantee for any specific hall not establish a legally valid contractual relationship.</li> <li>DS:</li> <li>0 or 1-888-882-9682</li> <li>search.com</li> <li>Mast revision 06/19/2023</li> <li>conyms:</li> </ul>
This information is bas product features and sh • <b>Department issuing Sh</b> Zymo Research Corp. Safety Department 17062 Murphy Ave. Irvine, CA 92614 USA Phone: 1-949-679-119 • <b>Contact:</b> sds@zymores • <b>Date of preparation / Abbreviations and acr</b> ADR: Accord relatif au trans-	<ul> <li>add on our present knowledge. However, this shall not constitute a guarantee for any specific nall not establish a legally valid contractual relationship.</li> <li>DS:</li> <li>0 or 1-888-882-9682</li> <li>search.com</li> <li>Mast revision 06/19/2023</li> <li>conyms:</li> <li>sport international des marchandises dangereuses par route (European Agreement Concerning the International</li> </ul>
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Printing date 06/19/2023

Reviewed on 03/15/2021

## Trade name: M-Binding Buffer

TLV: Threshold Limit Value PEL: Permissible Exposure Limit REL: Recommended Exposure Limit Acute Toxicity - Oral 4: Acute toxicity – Category 4 Skin Irritation 2: Skin corrosion/irritation – Category 2 Eye Irritation 2A: Serious eye damage/eye irritation – Category 2A (Contd. of page 8)



Printing date 06/19/2023

Reviewed on 03/15/2021

Identification	
Product identifier	
Trade name: M-Wash Buffer (Concentrate)	
<i>Article number:</i> D5001-4, D5002-4, D5007-4, <i>Application of the substance / the mixture</i> Lab	
<b>Details of the supplier of the safety data sheet</b> <b>Manufacturer/Supplier:</b> Zymo Research Corp. 17062 Murphy Ave., Irvine, CA 92614, U.S.A. sds@zymoresearch.com	, Phone: +1(949) 679-1190 or +1(888) 882-9682,
Information department: Product Safety Dept.	
<i>Emergency telephone number:</i> During normal business hours (8 am to 5 pm Pa	acific Standard Time): +1 (949) 679 1190
Hazard(s) identification	
Classification of the substance or mixture	
The product is not classified, according to the C <i>Label elements</i>	Globally Harmonized System (GHS).
The product is not classified, according to the C Label elements GHS label elements Void	Globally Harmonized System (GHS).
The product is not classified, according to the C Label elements GHS label elements Void Hazard pictograms Void Signal word Void	Globally Harmonized System (GHS).
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# 3 Composition/information on ingredients

• Chemical characterization: Mixtures

• Description: Mixture of the substances listed below with nonhazardous additions.

(Contd. on page 2)

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Reviewed on 03/15/2021

Trade name: M-Wash Buffer (Concentrate)

(Contd. of page 1)

· Dangerous components: Void

### 4 First-aid measures

- · Description of first aid measures
- · General information: No special measures required.
- · 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:

Wash eyes immediately, for at least 15 minutes, with large amounts of water, holding upper and lower lids open. Remove contact lenses, if present and it is easy to do so. Get medical attention immediately.

- After swallowing: Do not induce vomiting; immediately call for medical help.
- Information for doctor:
- · Most important symptoms and effects, both acute and delayed No further relevant information available.
- *Indication of any immediate medical attention and special treatment needed* No further relevant information available.

# 5 Fire-fighting measures

- · Extinguishing media
- Suitable extinguishing agents:

CO2, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam. Use fire fighting measures that suit the environment.

- · Advice for firefighters
- · Protective equipment: Wear protective clothing.

### 6 Accidental release measures

- · Personal precautions, protective equipment and emergency procedures Wear protective clothing.
- Environmental precautions: Dilute with plenty of water.
- Methods and material for containment and cleaning up:
- Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
- · 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.

#### • Protective Action Criteria for Chemicals

#### • **PAC-1**:

None of the ingredients is listed.

#### · PAC-2:

None of the ingredients is listed.

• PAC-3:

None of the ingredients is listed.

## 7 Handling and storage

· Handling:

· Precautions for safe handling No special measures required.

(Contd. on page 3)

Printing date 06/19/2023

Reviewed on 03/15/2021

Trade name: M-Wash Buffer (Concentrate)

· Information about protection against explosions and fires: No special measures required.

· Conditions for safe storage, including any incompatibilities

· Storage:

• Requirements to be met by storerooms and receptacles: No special requirements.

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

• Further information about storage conditions: None.

· Specific end use(s) Laboratory reagent

### 8 Exposure controls/personal protection

· Additional information about design of technical systems: No further data; see section 7.

· Control parameters

• Components with limit values that require monitoring at the workplace:

The product does not contain any relevant quantities of materials with critical values that have to be monitored at the workplace.

· Additional information: The lists that were valid during the creation were used as basis.

· Exposure controls

- · Personal protective equipment:
- General protective and hygienic measures:

The usual precautionary measures for handling chemicals should be followed.

- · Breathing equipment: Not required.
- 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. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.

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: Goggles recommended during refilling.

Information on basic physical and General Information	chemical properties	
Appearance:		
Form:	Liquid	
Color:	Clear	
Odor:	Odorless	
Odor threshold:	Not determined.	
pH-value:	Not determined.	
Change in condition		
Melting point/Melting range:	Undetermined.	
Boiling point/Boiling range:	Undetermined.	

(Contd. of page 2)

Printing date 06/19/2023

## Trade name: M-Wash Buffer (Concentrate)

Reviewed	on	03/	15/	2021
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	(Contd. of pag
Flash point:	Not applicable.
Flammability (solid, gaseous):	Not applicable.
Decomposition temperature:	Not determined.
Ignition temperature:	Product is not selfigniting.
Danger of explosion:	Product does not present an explosion hazard.
Explosion limits:	
Lower:	Not Applicable
Upper:	Not Applicable
Vapor pressure at 20 °C (68 °F):	23 hPa (17.3 mm Hg)
Density:	Not determined.
Relative density	Not determined.
Vapor density	Not determined.
Evaporation rate	Not determined.
Solubility in / Miscibility with	
Water:	Fully miscible.
Partition coefficient (n-octanol/wate	er): Not determined.
Viscosity:	
Dynamic:	Not determined.
Kinematic:	Not determined.
Solvent content:	
VOC content:	0.00 %
	0.0 g/l / 0.00 lb/gal
Solids content:	0.0 %
Other information	No further relevant information available.

# 10 Stability and reactivity

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

# 11 Toxicological information

· Information on toxicological effects

• Acute toxicity:

- · Primary irritant effect:
- on the skin: No irritant effect.
- on the eye: No irritating effect.
- · Sensitization: No sensitizing effects known.

(Contd. on page 5)

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#### Trade name: M-Wash Buffer (Concentrate)

(Contd. of page 4)

#### • Additional toxicological information:

The product is not subject to classification according to internally approved calculation methods for preparations: When used and handled according to specifications, the product does not have any harmful effects according to our experience and the information provided to us.

#### · Carcinogenic categories

· IARC (International Agency for Research on Cancer)

None of the ingredients is listed.

#### · NTP (National Toxicology Program)

None of the ingredients is listed.

#### · OSHA-Ca (Occupational Safety & Health Administration)

None of the ingredients is listed.

### 12 Ecological information

· Toxicity

- · Aquatic toxicity: No further relevant information available.
- · Persistence and degradability No further relevant information available.
- · Behavior in environmental systems:
- · Bioaccumulative potential No further relevant information available.
- · *Mobility in soil* No further relevant information available.
- Additional ecological information:
- · General notes: Not known to be hazardous to water.
- · Results of PBT and vPvB assessment
- · PBT: Not applicable.
- *vPvB*: Not applicable.
- · Other adverse effects No further relevant information available.

# 13 Disposal considerations

· Uncleaned packagings:

· Recommendation:

Dispose of container in acoordance with local/regional/national and international recommendations.

· Recommended cleansing agent: Water, if necessary with cleansing agents.

# 14 Transport information

· UN-Number · DOT, ADN, IMDG, IATA	not regulated	
· UN proper shipping name · DOT, ADN, IMDG, IATA	not regulated	
• Transport hazard class(es)		
· DOT, ADN, IMDG, IATA · Class	not regulated	
		(Contd. on page 6)

<sup>·</sup> Waste treatment methods

<sup>•</sup> Recommendation: Smaller quantities can be disposed of with household waste.

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Reviewed on 03/15/2021

Trade name: M-Wash Buffer (Concentrate)

(Contd.	of	nage	5)

· Packing group · DOT, IMDG, IATA	not regulated
• Environmental hazards:	Not applicable.
· Special precautions for user	Not applicable.
• Transport in bulk according to Annex I MARPOL73/78 and the IBC Code	<i>l of</i> Not applicable.
· UN "Model Regulation":	not regulated

## 15 Regulatory information

• Safety, health and environmental regulations/legislation specific for the substance or mixture No further relevant information available. • Sara

· Section 355 (extremely hazardous substances):

None of the ingredients is listed.

· Section 313 (Specific toxic chemical listings):

None of the ingredients is listed.

• TSCA (Toxic Substances Control Act):

None of the ingredients is listed.

· Hazardous Air Pollutants

None of the ingredients is listed.

· Proposition 65

· Chemicals known to cause cancer:

None of the ingredients is listed.

• Chemicals known to cause reproductive toxicity for females:

None of the ingredients is listed.

· Chemicals known to cause reproductive toxicity for males:

None of the ingredients is listed.

· Chemicals known to cause developmental toxicity:

None of the ingredients is listed.

· Carcinogenic categories

· EPA (Environmental Protection Agency)

None of the ingredients is listed.

• TLV (Threshold Limit Value)

None of the ingredients is listed.

·NIOSH-Ca (National Institute for Occupational Safety and Health)

None of the ingredients is listed.

• GHS label elements Void

· Hazard pictograms Void

· Signal word Void

· Hazard statements Void

(Contd. on page 7)

<sup>-</sup>US

Printing date 06/19/2023

Reviewed on 03/15/2021

Trade name: M-Wash Buffer (Concentrate)

(Contd. of page 6)

#### · Chemical safety assessment: A Chemical Safety Assessment has not been carried out.

### 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:

Zymo Research Corp. Safety Department 17062 Murphy Ave. Irvine, CA 92614 USA Phone: 1-949-679-1190 or 1-888-882-9682 · Contact: sds@zymoresearch.com · Date of preparation / last revision 06/19/2023 • Abbreviations and acronyms: 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 DOT: US Department of Transportation IATA: International Air Transport Association EINECS: European Inventory of Existing Commercial Chemical Substances ELINCS: European List of Notified Chemical Substances CAS: Chemical Abstracts Service (division of the American Chemical Society) NFPA: National Fire Protection Association (USA) HMIS: Hazardous Materials Identification System (USA) VOC: Volatile Organic Compounds (USA, EU) PBT: Persistent, Bioaccumulative and Toxic vPvB: very Persistent and very Bioaccumulative NIOSH: National Institute for Occupational Safety OSHA: Occupational Safety & Health TLV: Threshold Limit Value PEL: Permissible Exposure Limit REL: Recommended Exposure Limit



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# Safety Data Sheet acc. to OSHA HCS

Printing date 06/19/2023

Reviewed on 03/15/2021

Identification	
Product identifier	
Trade name: L-Desulphonation Buj	ffer
Article number: D5030-5, D5031-5, Application of the substance / the m	
Details of the supplier of the safety of Manufacturer/Supplier: Zymo Research Corp. 17062 Murphy Ave., Irvine, CA 926 sds@zymoresearch.com	<i>data sheet</i> 14, U.S.A., Phone: +1(949) 679-1190 or +1(888) 882-9682,
Information department: Product Sa	afety Dept.
<i>Emergency telephone number:</i> During normal business hours (8 am	to 5 pm Pacific Standard Time): +1 (949) 679 1190
Hazand(s) identification	
Hazard(s) identification	
Classification of the substance or m	ixture
GHS02 Flame	
Flammable Liquids 3	H226 Flammable liquid and vapor.
$\mathbf{A}$	
GHS07	
Eye Irritation 2A	H319 Causes serious eye irritation.
Eye Irritation 2A	H319 Causes serious eye irritation. gle Exposure 3 H336 May cause drowsiness or dizziness.
Eye Irritation 2A Specific Target Organ Toxicity - Sing Label elements GHS label elements The product is c Hazard pictograms GHS02, GHS07	gle Exposure 3 H336 May cause drowsiness or dizziness. classified and labeled according to the Globally Harmonized System (GHS).
Eye Irritation 2A Specific Target Organ Toxicity - Sing Label elements GHS label elements The product is of Hazard pictograms GHS02, GHS07 Signal word Warning Hazard-determining components of propan-2-ol	gle Exposure 3 H336 May cause drowsiness or dizziness.
Eye Irritation 2A Specific Target Organ Toxicity - Sing <i>Label elements</i> <i>GHS label elements</i> The product is of <i>Hazard pictograms</i> GHS02, GHS07 <i>Signal word</i> Warning <i>Hazard-determining components of</i> propan-2-ol ethanol <i>Hazard statements</i> Flammable liquid and vapor.	gle Exposure 3 H336 May cause drowsiness or dizziness.
Eye Irritation 2A Specific Target Organ Toxicity - Sing <i>Label elements</i> <i>GHS label elements</i> The product is of <i>Hazard pictograms</i> GHS02, GHS07 <i>Signal word</i> Warning <i>Hazard-determining components of</i> propan-2-ol ethanol <i>Hazard statements</i> Flammable liquid and vapor. Causes serious eye irritation.	gle Exposure 3 H336 May cause drowsiness or dizziness.
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Eye Irritation 2A Specific Target Organ Toxicity - Sing <i>Label elements</i> <i>GHS label elements</i> The product is of <i>Hazard pictograms</i> GHS02, GHS07 <i>Signal word</i> Warning <i>Hazard-determining components of</i> propan-2-ol ethanol <i>Hazard statements</i> Flammable liquid and vapor. Causes serious eye irritation. May cause drowsiness or dizziness. <i>Precautionary statements</i> Keep away from heat/sparks/open fla Ground/bond container and receiving Use explosion-proof electrical/ventils	gle Exposure 3 H336 May cause drowsiness or dizziness. classified and labeled according to the Globally Harmonized System (GHS). <i>Flabeling:</i> ames/hot surfaces No smoking. g equipment.
Eye Irritation 2A Specific Target Organ Toxicity - Sing <i>Label elements</i> <i>GHS label elements</i> The product is of <i>Hazard pictograms</i> GHS02, GHS07 <i>Signal word</i> Warning <i>Hazard-determining components of</i> propan-2-ol ethanol <i>Hazard statements</i> Flammable liquid and vapor. Causes serious eye irritation. May cause drowsiness or dizziness. <i>Precautionary statements</i> Keep away from heat/sparks/open fla Ground/bond container and receiving Use explosion-proof electrical/ventila Use only non-sparking tools.	gle Exposure 3 H336 May cause drowsiness or dizziness. classified and labeled according to the Globally Harmonized System (GHS). <i>Flabeling:</i> ames/hot surfaces No smoking. g equipment. ating/lighting/equipment.
Eye Irritation 2A Specific Target Organ Toxicity - Sing Label elements GHS label elements The product is of Hazard pictograms GHS02, GHS07 Signal word Warning Hazard-determining components of propan-2-ol ethanol Hazard statements Flammable liquid and vapor. Causes serious eye irritation. May cause drowsiness or dizziness. Precautionary statements Keep away from heat/sparks/open fla Ground/bond container and receiving Use explosion-proof electrical/ventils	gle Exposure 3 H336 May cause drowsiness or dizziness. classified and labeled according to the Globally Harmonized System (GHS). <i>Flabeling:</i> mes/hot surfaces No smoking. g equipment. ating/lighting/equipment.

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#### Trade name: L-Desulphonation Buffer

	(Contd. of page 1)
Wash thoroughly after handling.	
Use only outdoors or in a well-ventilated area.	
Wear protective gloves/protective clothing/eye protection/face protection.	
If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.	
IF INHALED: Remove person to fresh air and keep comfortable for breathing.	
If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and ex	asy to do
Continue rinsing.	<i>xby</i> to <b>d</b> 0.
Call a poison center/doctor if you feel unwell.	
If eye irritation persists: Get medical advice/attention.	
In case of fire: Use CO2, powder or water spray to extinguish.	
Store in a well-ventilated place. Keep container tightly closed.	
Store in a well-ventilated place. Keep cool.	
Store locked up.	
Dispose of contents/container in accordance with local/regional/national/international regulations.	
· Classification system:	
· NFPA ratings (scale 0 - 4)	
Health $= 2$	
3 Fire = 3	
2 0 Reactivity = 0	
HMIS-ratings (scale 0 - 4)	
HEALTH 2 Health = $2$	
FIRE 3 Fire = 3	
<b>REACTIVITY</b> Reactivity = $0$	
· Other hazards	
· Results of PBT and vPvB assessment	
· <b><i>PBT</i></b> : Not applicable.	
• <b><i>v</i>PvB</b> : Not applicable.	
· · · · · · · · · · · · · · · · · · ·	
3 Composition/information on ingredients	
e composition information on ingreatents	

• Chemical characterization: Mixtures

• *Description:* Mixture of the substances listed below with nonhazardous additions.

Dangerous components:		
	ethanol	≤30%
CAS: 67-63-0	propan-2-ol	≤30%
CAS: 1310-73-2	sodium hydroxide	≤2.5%

# 4 First-aid measures

- Description of first aid measures
- · After inhalation: Supply fresh air; consult doctor in case of complaints.
- · After skin contact: Immediately wash with water and soap and rinse thoroughly.
- After eye contact:

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

Wash eyes immediately, for at least 15 minutes, with large amounts of water, holding upper and lower lids open. Remove contact lenses, if present and it is easy to do so. Get medical attention immediately.

• After swallowing: Do not induce vomiting; immediately call for medical help.

(Contd. on page 3)

<sup>—</sup> US

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Trade name: L-Desulphonation Buffer

- · Information for doctor:
- · Most important symptoms and effects, both acute and delayed No further relevant information available.
- · Indication of any immediate medical attention and special treatment needed

No further relevant information available.

## 5 Fire-fighting measures

- · Extinguishing media
- Suitable extinguishing agents:
- CO2, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam. • Special hazards arising from the substance or mixture
- Products of thermal decomposition of this material would include caustic vapors as well as sodium and sulfur compounds.
- Advice for firefighters
- Protective equipment:
- Wear protective clothing, including self-contained breathing apparatus, for fighting fires involving this material.

## 6 Accidental release measures

- *Personal precautions, protective equipment and emergency procedures* Wear protective equipment. Keep unprotected persons away.
- *Environmental precautions:* Dilute with plenty of water.

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

- *Methods and material for containment and cleaning up:* Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust). Ensure adequate ventilation.
- 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.
- Protective Action Criteria for Chemicals

• PAC-1:		
	ethanol	1,800 ppm
CAS: 67-63-0	propan-2-ol	400 ppm
CAS: 1310-73-2	sodium hydroxide	0.5 mg/m <sup>3</sup>
· PAC-2:		
	ethanol	3300* ppm
CAS: 67-63-0	CAS: 67-63-0 propan-2-ol	
CAS: 1310-73-2	sodium hydroxide	5 mg/m <sup>3</sup>
• PAC-3:		
	ethanol	15000* ppm
CAS: 67-63-0	propan-2-ol	12000** ppm
CAS: 1310-73-2	sodium hydroxide	50 mg/m <sup>3</sup>

(Contd. on page 4)

(Contd. of page 2)

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#### Trade name: L-Desulphonation Buffer

(Contd. of page 3)

## 7 Handling and storage

- · Handling:
- *Precautions for safe handling* Ensure good ventilation/exhaustion at the workplace. Prevent formation of aerosols.
- Information about protection against explosions and fires: Keep ignition sources away - Do not smoke.

Protect against electrostatic charges.

- $\cdot$  Conditions for safe storage, including any incompatibilities
- · Storage:
- *Requirements to be met by storerooms and receptacles:* Store in cool, dry place. Store in well-ventilated location.
- Store in cool, dry place. Store in well-ventilated location.
- Information about storage in one common storage facility: Do not store together with acids, chlorinated solvents, and reactive metals (e.g. aluminum, phosphorous, tin/tin oxides, zinc).
- · Further information about storage conditions: Keep receptacle tightly sealed.
- · Specific end use(s) Laboratory reagent

## 8 Exposure controls/personal protection

• Additional information about design of technical systems: No further data; see section 7.

· Control parameters

Work under a chemical fume hood when using this product. Ensure eyewash station and safety showers are readily accessible.

· Compone	ents with limit values that require monitoring at the workplace:
ethanol	
PEL Lon	ng-term value: 1900 mg/m <sup>3</sup> , 1000 ppm
REL Lon	ng-term value: 1900 mg/m <sup>3</sup> , 1000 ppm
TLV Sho A3	ort-term value: 1000 ppm
CAS: 67-0	63-0 propan-2-ol
PEL Lon	ng-term value: 980 mg/m <sup>3</sup> , 400 ppm
	ort-term value: 1225 mg/m <sup>3</sup> , 500 ppm ng-term value: 980 mg/m <sup>3</sup> , 400 ppm
Lon	ort-term value: 400 ppm ng-term value: 200 ppm I, A4
CAS: 131	10-73-2 sodium hydroxide
PEL Lon	ng-term value: 2 mg/m <sup>3</sup>
REL Ceil	ling limit value: 2 mg/m <sup>3</sup>
TLV Ceil	ling limit value: 2 mg/m <sup>3</sup>
· Ingredien	ts with biological limit values:
CAS: 67-0	63-0 propan-2-ol
BEI 40 m	ng/L
Med	lium: urine
	e: end of shift at end of workweek
Para	meter: Acetone (background, nonspecific)
	(Contd. on pag

US

# Safety Data Sheet acc. to OSHA HCS

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# Trade name: L-Desulphonation Buffer

Additional information: The lists that were valid during the creation were used as basis.	
Exposure controls	
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. Avoid contact with the eyes and skin.	
Breathing equipment:	
In case of brief exposure or low pollution use respiratory filter device. In case of intensive or	longer exposure use
respiratory protective device that is independent of circulating air.	ionger exposure use
Protection of hands:	
Directorities aloues	
Protective gloves	
The glove material has to be impermeable and resistant to the product/ the substance/ the prep	
Due to missing tests no recommendation to the glove material can be given for the product/ th	ne preparation/ the
chemical mixture.	
Selection of the glove material on consideration of the penetration times, rates of diffusion an	d the degradation
Material of gloves	montra of quality and
The selection of the suitable gloves does not only depend on the material, but also on further varies from manufacturer to manufacturer. As the product is a preparation of several substance of the several several several substance of the several	
the glove material can not be calculated in advance and has therefore to be checked prior to the	
Penetration time of glove material	ie application.
The exact break through time has to be found out by the manufacturer of the protective gloves	s and has to be
observed.	
Eye protection:	
Tightly sealed goggles	
T-Binly bould gogglob	
Physical and chemical properties	
Thystem with entendent properties	

<ul> <li>Information on basic physical and</li> <li>General Information</li> </ul>	chemical properties	
· Appearance:	Liquid	
Form: Color:	Liquid Clear light yellow	
· Odor:	Alcohol-like	
• Odor threshold:	Not determined.	
· pH-value:	Not determined.	
<sup>•</sup> Change in condition Melting point/Melting range: Boiling point/Boiling range:	Undetermined. 78 °C (172.4 °F)	
· Flash point:	<30 °C (<86 °F)	
· Flammability (solid, gaseous):	Flammable.	
		(Contd. on page

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### Trade name: L-Desulphonation Buffer

	(Contd. of page
· Auto igniting:	425 °C (797 °F)
· Decomposition temperature:	Not determined.
· Ignition temperature:	Product is not selfigniting.
Danger of explosion:	Product is not explosive. However, formation of explosive air/vapor mixtures are possible.
• Explosion limits:	
Lower:	2 Vol %
Upper:	15 Vol %
· Vapor pressure at 20 °C (68 °F):	59 hPa (44.3 mm Hg)
· Density:	Not determined.
Relative density	Not determined.
· Vapor density	Not determined.
· Evaporation rate	Not determined.
· Solubility in / Miscibility with	
Water:	Fully miscible.
· Partition coefficient (n-octanol/wate	er): Not determined.
· Viscosity:	
Dynamic:	Not determined.
Kinematic:	Not determined.
· Solvent content:	
Organic solvents:	58.0 %
VÕC content:	58.00 %
	580.0 g/l / 4.84 lb/gal
Solids content:	1.0 %
• Other information	No further relevant information available.

# 10 Stability and reactivity

· *Reactivity* No further relevant information available.

· Chemical stability

- Thermal decomposition / conditions to be avoided: No decomposition if used according to specifications.
- · Possibility of hazardous reactions No dangerous reactions known.
- · Conditions to avoid No further relevant information available.
- · Incompatible materials: No further relevant information available.
- · Hazardous decomposition products: No dangerous decomposition products known.

# 11 Toxicological information

· Information on toxicological effects

• Acute toxicity:

· LD/LC50 values that are relevant for classification:

CAS: 67-63-0 propan-2-ol

Oral LD50 5,045 mg/kg (rat)

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#### Trade name: L-Desulphonation Buffer

		(Contd. of page 6)
Dermal	LD50	12,800 mg/kg (rabbit)
Inhalative	LC50/4 h	30 mg/l (rat)
· Primary ir	ritant effe	ct:
on the skin	n: Irritant t	o skin and mucous membranes.
• on the eye	: Irritating	effect.
• Sensitizati	on: No ser	isitizing effects known.
		ical information:
The produ	ct shows th	e following dangers according to internally approved calculation methods for preparations:
Irritant		
· Carcinoge	nic catego	ries
· IARC (Int	ernational	Agency for Research on Cancer)
CAS: 67-6	3-0 propa	n-2-ol 3
· NTP (Nati	ional Toxio	cology Program)
None of th	e ingredier	ats is listed.
· OSHA-Ca	(Occupati	onal Safety & Health Administration)

None of the ingredients is listed.

## 12 Ecological information

· Toxicity

- · Aquatic toxicity: No further relevant information available.
- · Persistence and degradability No further relevant information available.
- · Behavior in environmental systems:
- · Bioaccumulative potential No further relevant information available.
- · Mobility in soil No further relevant information available.
- Additional ecological information:
- · General notes:
- Water hazard class 1 (Self-assessment): slightly hazardous for water

Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.

- · Results of PBT and vPvB assessment
- *PBT*: Not applicable.
- *vPvB*: Not applicable.
- · Other adverse effects No further relevant information available.

# 13 Disposal considerations

- · Waste treatment methods
- · Recommendation:

Dispose of contents in accordance with local/regional/national, and international recommendations.

- · Uncleaned packagings:
- · Recommendation:

Dispose of container in acoordance with local/regional/national and international recommendations.

• Recommended cleansing agent: Water, if necessary with cleansing agents.

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Trade name: L-Desulphonation Buffer

(Contd. of page 7)

UN-Number		
DOT, IMDG, IATA	UN1993	
UN proper shipping name		
DOT	Flammable liquids, n.o.s. (Ethanol, Isopropanol)	
IMDG	FLAMMABLE LIQUID, N.O.S. (ETHANOL (ETHYL	
IATA	ALCOHOL), ISOPROPANOL (ISOPROPYL ALCOHOL)) FLAMMABLE LIQUID, N.O.S. (ETHANOL, ISOPROPAN	ω
	(ISOPROPYL ALCOHOL))	UI.
Transport hazard class(es)		
DOT		
<b>A</b>		
3		
Class	3 Flammable liquids	
Label	3	
IMDG, IATA		
3		
Class	3 Flammable liquids	
Label	3	
Packing group		
DOT, IATA	III	
Environmental hazards:	Not applicable.	
Special precautions for user	Warning: Flammable liquids	
Hazard identification number (Kemler code EMS Number:	9:30 F-E,S-E	
Stowage Category	A	
Transport in bulk according to Annex II of		
MARPOL73/78 and the IBC Code	Not applicable.	
Transport/Additional information:		
DOT		
Quantity limitations	On passenger aircraft/rail: 60L	
	On cargo aircraft only: 220L	
IMDG		
Limited quantities (LQ)	5L Coder F1	
Excepted quantities (EQ)	Code: E1 Maximum net quantity per inner packaging: 30 ml	
	Maximum net quantity per niner packaging: 50 ml	

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Trade name: L-Desulphonation Buffer

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• UN "Model Regulation":

UN 1993 FLAMMABLE LIQUID, N.O.S. (ETHANOL (ETHYL ALCOHOL), ISOPROPANOL (ISOPROPYL ALCOHOL)), 3, III

## **15 Regulatory information**

• Safety, health and environmental regulations/legislation specific for the substance or mixture No further relevant information available.

• Sara

• Section 355 (extremely hazardous substances):

None of the ingredients is listed.

• Section 313 (Specific toxic chemical listings):

CAS: 67-63-0 propan-2-ol

• TSCA (Toxic Substances Control Act):

All components have the value ACTIVE.

· Hazardous Air Pollutants

None of the ingredients is listed.

· Proposition 65

· Chemicals known to cause cancer:

None of the ingredients is listed.

· Chemicals known to cause reproductive toxicity for females:

None of the ingredients is listed.

· Chemicals known to cause reproductive toxicity for males:

None of the ingredients is listed.

· Chemicals known to cause developmental toxicity:

None of the ingredients is listed.

#### · Carcinogenic categories

· EPA (Environmental Protection Agency)

None of the ingredients is listed.

• TLV (Threshold Limit Value)

 ethanol
 A3

 CAS: 67-63-0
 propan-2-ol
 A4

 · NIOSH-Ca (National Institute for Occupational Safety and Health)
 A4

None of the ingredients is listed.

• *GHS label elements* The product is classified and labeled according to the Globally Harmonized System (GHS). • *Hazard pictograms* GHS02, GHS07

· Signal word Warning

Hazard-determining components of labeling:

propan-2-ol ethanol

Unarrow distant and

• Hazard statements

Flammable liquid and vapor. Causes serious eye irritation.

May cause drowsiness or dizziness.

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# Trade name: L-Desulphonation Buffer

(C	ontd. of page 9)
· Precautionary statements	1017
Keep away from heat/sparks/open flames/hot surfaces No smoking.	
Ground/bond container and receiving equipment.	
Use explosion-proof electrical/ventilating/lighting/equipment.	
Use only non-sparking tools.	
Take precautionary measures against static discharge.	
Avoid breathing dust/fume/gas/mist/vapors/spray	
Wash thoroughly after handling.	
Use only outdoors or in a well-ventilated area.	
Wear protective gloves/protective clothing/eye protection/face protection.	
If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.	
IF INHALED: Remove person to fresh air and keep comfortable for breathing.	
If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy	to do.
Continue rinsing.	
Call a poison center/doctor if you feel unwell.	
If eye irritation persists: Get medical advice/attention.	
In case of fire: Use CO2, powder or water spray to extinguish.	
Store in a well-ventilated place. Keep container tightly closed.	
Store in a well-ventilated place. Keep cool.	
Store locked up.	
Dispose of contents/container in accordance with local/regional/national/international regulations.	
· Chemical safety assessment: A Chemical Safety Assessment has not been carried out.	
16 Other information	
10 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:	
Zymo Research Corp.	
Safety Department	
17062 Murphy Ave.	
Irvine, CA 92614	
USA	
Phone: 1-949-679-1190 or 1-888-882-9682	
· Contact: sds@zymoresearch.com	
• Date of preparation / last revision 06/19/2023	
· Abbreviations and acronyms:	
ADR: Accord relatif au transport international des marchandises dangereuses par route (European Agreement Concerning the I	nternational
Carriage of Dangerous Goods by Road)	incernational
IMDG: International Maritime Code for Dangerous Goods	
DOT: US Department of Transportation	
IATA: International Air Transport Association	
EINECS: European Inventory of Existing Commercial Chemical Substances	
ELINCS: European List of Notified Chemical Substances	
CAS: Chemical Abstracts Service (division of the American Chemical Society) NFPA: National Fire Protection Association (USA)	
HMIS: Hazardous Materials Identification System (USA)	
VOC: Volatile Organic Compounds (USA, EU)	
LC50: Lethal concentration, 50 percent	
LD50: Lethal dose, 50 percent	
PBT: Persistent, Bioaccumulative and Toxic	
vPvB: very Persistent and very Bioaccumulative	
NIOSH: National Institute for Occupational Safety	
OSHA: Occupational Safety & Health TLV: Threshold Limit Value	
TLV: Threshold Limit Value PEL: Permissible Exposure Limit	
REL: Recommended Exposure Limit	
KEL. KECOIIIIIEIUEU EXPOSUIE LIIIII	
	ntd. on page 11)

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#### Trade name: L-Desulphonation Buffer

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BEI: Biological Exposure Limit Flammable Liquids 3: Flammable liquids – Category 3 Eye Irritation 2A: Serious eye damage/eye irritation – Category 2A Specific Target Organ Toxicity - Single Exposure 3: Specific target organ toxicity (single exposure) – Category 3



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Identification	
Product identifier	
Trade name: M-Elution Buffer	
Article number: D5001-6, D5002-6, D5007-6, D504 Application of the substance / the mixture Laborator	
Details of the supplier of the safety data sheet Manufacturer/Supplier: Zymo Research Corp. 17062 Murphy Ave., Irvine, CA 92614, U.S.A., Phon sds@zymoresearch.com	e: +1(949) 679-1190 or +1(888) 882-9682,
Information department: Product Safety Dept.	
<i>Emergency telephone number:</i> During normal business hours (8 am to 5 pm Pacific S	Standard Time): +1 (949) 679 1190
Hazard(s) identification	
	ly Harmonized System (GHS).
Classification of the substance or mixture The product is not classified, according to the Global Label elements GHS label elements Void Hazard pictograms Void Signal word Void Hazard statements Void Classification system: NFPA ratings (scale 0 - 4) Health = 0	ly Harmonized System (GHS).
The product is not classified, according to the Global Label elements GHS label elements Void Hazard pictograms Void Signal word Void Hazard statements Void Classification system:	ly Harmonized System (GHS).
The product is not classified, according to the Global Label elements GHS label elements Void Hazard pictograms Void Signal word Void Hazard statements Void Classification system: NFPA ratings (scale 0 - 4) Health = 0 Fire = 0	ly Harmonized System (GHS).
The product is not classified, according to the Global Label elements GHS label elements Void Hazard pictograms Void Signal word Void Hazard statements Void Classification system: NFPA ratings (scale 0 - 4) Health = 0 Fire = 0 Reactivity = 0	ly Harmonized System (GHS).

# 3 Composition/information on ingredients

· Chemical characterization: Mixtures

• Description: Mixture of the substances listed below with nonhazardous additions.

(Contd. on page 2)

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Trade name: M-Elution Buffer

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· Dangerous components: Void

#### 4 First-aid measures

- · Description of first aid measures
- · General information: No special measures required.
- · 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:

Wash eyes immediately, for at least 15 minutes, with large amounts of water, holding upper and lower lids open. Remove contact lenses, if present and it is easy to do so. Get medical attention immediately.

- · After swallowing: Do not induce vomiting; immediately call for medical help.
- Information for doctor:
- · Most important symptoms and effects, both acute and delayed No further relevant information available.
- *Indication of any immediate medical attention and special treatment needed* No further relevant information available.

## 5 Fire-fighting measures

- Extinguishing media
- Suitable extinguishing agents:

CO2, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam. Use fire fighting measures that suit the environment.

- Advice for firefighters
- · Protective equipment: Wear protective clothing.

#### 6 Accidental release measures

· Personal precautions, protective equipment and emergency procedures Wear protective clothing.

• Environmental precautions:

Dilute with plenty of water.

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

- Methods and material for containment and cleaning up:
- Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
- · 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.
- Protective Action Criteria for Chemicals

• <i>PAC-1</i> :		
CAS: 1185-53-1	2-amino-2-(hydroxymethyl)propane-1,3-diolhydrochloride	12 mg/m <sup>3</sup>
CAS: 6381-92-6	Edetate Disodium, Dihydrate	30 mg/m <sup>3</sup>
· PAC-2:		
CAS: 1185-53-1	2-amino-2-(hydroxymethyl)propane-1,3-diolhydrochloride	130 mg/m <sup>3</sup>
CAS: 6381-92-6	Edetate Disodium, Dihydrate	330 mg/m <sup>3</sup>
• PAC-3:		
CAS: 1185-53-1	2-amino-2-(hydroxymethyl)propane-1,3-diolhydrochloride	790 mg/m <sup>3</sup>
		(Contd. on page 3

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Reviewed on 03/15/2021

Trade name: M-Elution Buffer

CAS: 6381-92-6 Edetate Disodium, Dihydrate

#### 7 Handling and storage

· Handling:

- · Precautions for safe handling No special measures required.
- · Information about protection against explosions and fires: No special measures required.
- · Conditions for safe storage, including any incompatibilities
- Storage:
- Requirements to be met by storerooms and receptacles: No special requirements.
- · Information about storage in one common storage facility: Not required.
- Further information about storage conditions: None.
- · Specific end use(s) Laboratory reagent

#### 8 Exposure controls/personal protection

· Additional information about design of technical systems: No further data; see section 7.

- · Control parameters
- Components with limit values that require monitoring at the workplace:
- The product does not contain any relevant quantities of materials with critical values that have to be monitored at the workplace.
- Additional information: The lists that were valid during the creation were used as basis.
- · Exposure controls
- · Personal protective equipment:
- General protective and hygienic measures:
- The usual precautionary measures for handling chemicals should be followed.
- · Breathing equipment: Not required.
- 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. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.

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: Goggles recommended during refilling.

	ysical and chemical properties	
General Information		
Appearance:		
Form:	Liquid	
Color:	Clear	

(Contd. of page 2)  $2,000 \text{ mg/m}^3$ 

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Trade name: M-Elution Buffer

	(Contd. of	page
Odor:	Odorless	
Odor threshold:	Not determined.	
pH-value:	Not determined.	
Change in condition		
Melting point/Melting range:	Undetermined.	
Boiling point/Boiling range:	Undetermined.	
Flash point:	Not applicable.	
Flammability (solid, gaseous):	Not applicable.	
Decomposition temperature:	Not determined.	
Ignition temperature:	Product is not selfigniting.	
Danger of explosion:	Product does not present an explosion hazard.	
Explosion limits:		
Lower:	Not Applicable	
Upper:	Not Applicable	
Vapor pressure:	Not determined.	
Density:	Not determined.	
Relative density	Not determined.	
Vapor density	Not determined.	
Evaporation rate	Not determined.	
Solubility in / Miscibility with		
Water:	Fully miscible.	
Partition coefficient (n-octanol/wat	ter): Not determined.	
Viscosity:		
Dynamic:	Not determined.	
Kinematic:	Not determined.	
Solvent content:		
VOC content:	0.00 %	
	0.0 g/l / 0.00 lb/gal	
Solids content:	2.0 %	
Other information	No further relevant information available.	

# 10 Stability and reactivity

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

(Contd. on page 5)

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#### Trade name: M-Elution Buffer

(Contd. of page 4)

## 11 Toxicological information

- · Information on toxicological effects
- Acute toxicity:
- Primary irritant effect:
- on the skin: No irritant effect.
- on the eye: No irritating effect.
- Sensitization: No sensitizing effects known.
- Additional toxicological information:

The product is not subject to classification according to internally approved calculation methods for preparations: When used and handled according to specifications, the product does not have any harmful effects according to our experience and the information provided to us.

· Carcinogenic categories

· IARC (International Agency for Research on Cancer)

None of the ingredients is listed.

· NTP (National Toxicology Program)

None of the ingredients is listed.

· OSHA-Ca (Occupational Safety & Health Administration)

None of the ingredients is listed.

## 12 Ecological information

- · Toxicity
- · Aquatic toxicity: No further relevant information available.
- · Persistence and degradability No further relevant information available.
- · Behavior in environmental systems:
- · Bioaccumulative potential No further relevant information available.
- · Mobility in soil No further relevant information available.
- Additional ecological information:

· General notes:

Water hazard class 1 (Self-assessment): slightly hazardous for water

Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.

- · Results of PBT and vPvB assessment
- *PBT*: Not applicable.
- · vPvB: Not applicable.
- · Other adverse effects No further relevant information available.

#### 13 Disposal considerations

- Waste treatment methods
- Recommendation: Smaller quantities can be disposed of with household waste.
- · Uncleaned packagings:
- · Recommendation:

Dispose of container in acoordance with local/regional/national and international recommendations.

· Recommended cleansing agent: Water, if necessary with cleansing agents.

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#### Trade name: M-Elution Buffer

(Contd. of page 5)

UN-Number DOT, ADN, IMDG, IATA	not regulated	
UN proper shipping name DOT, ADN, IMDG, IATA	not regulated	
Transport hazard class(es)		
DOT, ADN, IMDG, IATA Class	not regulated	
Packing group DOT, IMDG, IATA	not regulated	
Environmental hazards:	Not applicable.	
Special precautions for user	Not applicable.	
Transport in bulk according to Annex MARPOL73/78 and the IBC Code	<i>II of</i> Not applicable.	
UN "Model Regulation":	not regulated	

## 15 Regulatory information

• Safety, health and environmental regulations/legislation specific for the substance or mixture No further relevant information available.

· Sara

• Section 355 (extremely hazardous substances):

None of the ingredients is listed.

· Section 313 (Specific toxic chemical listings):

None of the ingredients is listed.

• TSCA (Toxic Substances Control Act):

CAS: 1185-53-1 2-amino-2-(hydroxymethyl)propane-1,3-diolhydrochloride

ACTIVE

· Hazardous Air Pollutants

None of the ingredients is listed.

· Proposition 65

· Chemicals known to cause cancer:

None of the ingredients is listed.

· Chemicals known to cause reproductive toxicity for females:

None of the ingredients is listed.

• Chemicals known to cause reproductive toxicity for males:

None of the ingredients is listed.

· Chemicals known to cause developmental toxicity:

None of the ingredients is listed.

· Carcinogenic categories

· EPA (Environmental Protection Agency)

None of the ingredients is listed.

(Contd. on page 7)

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Trade name: M-Elution Buffer

(Contd. of page 6)

• *TLV (Threshold Limit Value)* None of the ingredients is listed.

· NIOSH-Ca (National Institute for Occupational Safety and Health)

None of the ingredients is listed.

· GHS label elements Void

· Hazard pictograms Void

· Signal word Void

• Hazard statements Void

· Chemical safety assessment: A Chemical Safety Assessment has not been carried out.

#### **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: Zymo Research Corp. Safety Department 17062 Murphy Ave. Irvine, CA 92614 USA Phone: 1-949-679-1190 or 1-888-882-9682 · Contact: sds@zymoresearch.com · Date of preparation / last revision 06/19/2023 · Abbreviations and acronyms: 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 DOT: US Department of Transportation IATA: International Air Transport Association EINECS: European Inventory of Existing Commercial Chemical Substances ELINCS: European List of Notified Chemical Substances CAS: Chemical Abstracts Service (division of the American Chemical Society) NFPA: National Fire Protection Association (USA) HMIS: Hazardous Materials Identification System (USA) VOC: Volatile Organic Compounds (USA, EU) PBT: Persistent, Bioaccumulative and Toxic vPvB: very Persistent and very Bioaccumulative NIOSH: National Institute for Occupational Safety OSHA: Occupational Safety & Health TLV: Threshold Limit Value PEL: Permissible Exposure Limit REL: Recommended Exposure Limit



Printing date 06/19/2023

Reviewed on 06/19/2023

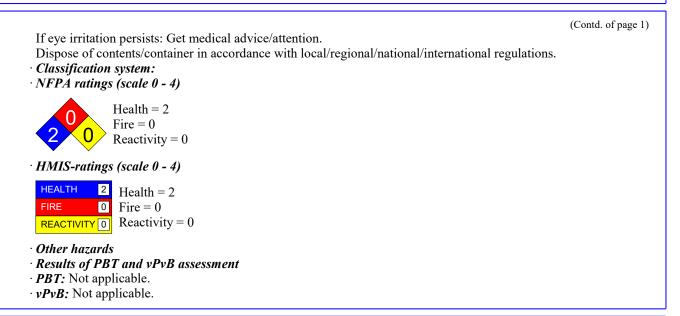
1 Identification         • Product identifier         • Trade name: E2-Methylation Magprep Beads         • Article number: D4100-5-4, D4100-5-8, D4100-5-16         • Application of the substance / the mixture Laboratory Reagent         • Details of the supplier of the safety data sheet         • Manufacturer/Supplier:         Zymo Research Corp.         17062 Murphy Ave., Irvine, CA 92614, U.S.A., Phone: +1(949) 679-1190 or +1(888) 882-9682, sds@zymoresearch.com         • Information department: Product Safety Dept.         • Emergency telephone number:         During normal business hours (8 am to 5 pm Pacific Standard Time): +1 (949) 679 1190         2 Hazard(s) identification         • Classification of the substance or mixture         • Or         • GHS ide elements         • GHS ide elements         • GHS ide elements         • GHS ide elements         • Hazard pictograms GHS07         • Signal word Warning         • Hazard statements         • Hazard statements         • Hazard statements         • Gauses skin irritation.         • Hazard statements         Manufacturer	3	
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If skin irritation occurs: Get medical advice/attention. Take off contaminated clothing and wash it before reuse. (Contd. on page	guanidinium chloride <i>Hazard statements</i> Harmful if swallowed Causes skin irritation Causes serious eye in <i>Precautionary staten</i> Wash thoroughly after Do not eat, drink or s Wear eye protection If swallowed: Call a p Rinse mouth. If on skin: Wash with Specific treatment (see If in eyes: Rinse caut Continue rinsing. If skin irritation occu	d.  ritation. ments er handling. smoke when using this product. / face protection. poison center/doctor if you feel unwell. n plenty of water. ee on this label). iously with water for several minutes. Remove contact lenses, if present and easy to do. rrs: Get medical advice/attention. ed clothing and wash it before reuse.

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#### Trade name: EZ-Methylation Magprep Beads



#### 3 Composition/information on ingredients

<sup>•</sup> Chemical characterization: Mixtures

· Description: Mixture of the substances listed below with nonhazardous additions.

#### • Dangerous components:

CAS: 50-01-1 guanidinium chloride

0-≤100%

## 4 First-aid measures

· Description of first aid measures

• General information:

Symptoms of poisoning may even occur after several hours; therefore medical observation for at least 48 hours after the accident.

- · After inhalation: Supply fresh air; consult doctor in case of complaints.
- · After skin contact: Immediately wash with water and soap and rinse thoroughly.
- After eye contact:

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

Wash eyes immediately, for at least 15 minutes, with large amounts of water, holding upper and lower lids open. Remove contact lenses, if present and it is easy to do so. Get medical attention immediately.

- *After swallowing:* Do not induce vomiting; immediately call for medical help.
- · Information for doctor:
- Most important symptoms and effects, both acute and delayed No further relevant information available.
- Indication of any immediate medical attention and special treatment needed

No further relevant information available.

#### 5 Fire-fighting measures

- · Extinguishing media
- Suitable extinguishing agents:

CO2, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam. Use fire fighting measures that suit the environment.

(Contd. on page 3)

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Trade name: EZ-Methylation Magprep Beads

· Advice for firefighters

• Protective equipment: Wear protective clothing.

#### 6 Accidental release measures

· Personal precautions, protective equipment and emergency procedures Wear protective clothing.

· Environmental precautions: Do not allow to enter sewers/ surface or ground water.

• 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.

· 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.

· Protective Action Criteria for Chemicals

• PAC-1:		
CAS: 50-01-1	guanidinium chloride	1.4 mg/m <sup>3</sup>
CAS: 1309-37-1	diiron trioxide	15 mg/m <sup>3</sup>
CAS: 7631-86-9	silicon dioxide, chemically prepared	18 mg/m <sup>3</sup>
· PAC-2:		
CAS: 50-01-1	guanidinium chloride	16 mg/m <sup>3</sup>
CAS: 1309-37-1	diiron trioxide	360 mg/m <sup>3</sup>
CAS: 7631-86-9	silicon dioxide, chemically prepared	740 mg/m <sup>3</sup>
• PAC-3:		
CAS: 50-01-1	guanidinium chloride	94 mg/m <sup>3</sup>
CAS: 1309-37-1	diiron trioxide	2,200 mg/m <sup>3</sup>
CAS: 7631-86-9	silicon dioxide, chemically prepared	4,500 mg/m <sup>3</sup>

## 7 Handling and storage

· Handling:

· Precautions for safe handling

No special precautions are necessary if used correctly. Avoid breathing dust, vapor, mist or gas. Avoid prolonged or reapeated exposure. Use only in a chemical fume hood. Open and handle container with care. Keep ignition sources away.

- · Information about protection against explosions and fires: No special measures required.
- · Conditions for safe storage, including any incompatibilities

· Storage:

- Requirements to be met by storerooms and receptacles: No special requirements.
- · Information about storage in one common storage facility: Not required.
- Further information about storage conditions: Keep receptacle tightly sealed.
- · Specific end use(s) Laboratory reagent

#### 8 Exposure controls/personal protection

· Additional information about design of technical systems: No further data; see section 7.

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#### Trade name: EZ-Methylation Magprep Beads



· Information on basic physical and · · General Information	chemical properties	
· Appearance:		
Form:	Suspension	
Color:	Dark	
· Odor:	undistinguishable	
· Odor threshold:	Not determined.	
· pH-value:	Not determined.	
· Change in condition		
Melting point/Melting range:	Undetermined.	

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Boiling point/Boiling range:	Undetermined.	
· Flash point:	Not applicable.	
· Flammability (solid, gaseous):	Not applicable.	
· Auto igniting:	>370 °C (>698 °F)	
• Decomposition temperature:	Not determined.	
<sup>•</sup> Ignition temperature:	Product is not selfigniting.	
• Danger of explosion:	Product does not present an explosion hazard.	
· Explosion limits: Lower: Upper:	Not Applicable Not Applicable	
· Vapor pressure:	Not determined.	
<ul> <li>Density:</li> <li>Relative density</li> <li>Vapor density</li> <li>Evaporation rate</li> </ul>	Not determined. Not determined. Not determined. Not determined.	
• Solubility in / Miscibility with Water:	Not miscible or difficult to mix	
· Partition coefficient (n-octanol/wa	ter): Not determined.	
· Viscosity: Dynamic: Kinematic:	Not determined. Not determined.	
• Solvent content: VOC content:	0.00 % 0.0 g/l / 0.00 lb/gal	
Solids content:	80.0 %	
• Other information	No further relevant information available.	

# 10 Stability and reactivity

• *Reactivity* No further relevant information available.

· Chemical stability

· Thermal decomposition / conditions to be avoided: No decomposition if used according to specifications.

· Possibility of hazardous reactions No dangerous reactions known.

· Conditions to avoid No further relevant information available.

· Incompatible materials: No further relevant information available.

· Hazardous decomposition products: No dangerous decomposition products known.

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## 11 Toxicological information

· Information on toxicological effects

• Acute toxicity:

· LD/LC50 values that are relevant for classification:

#### CAS: 50-01-1 guanidinium chloride

Oral LD50 475 mg/kg (rat)

- · Primary irritant effect:
- · on the skin: Irritant to skin and mucous membranes.
- on the eye: Irritating effect.
- Sensitization: No sensitizing effects known.
- $\cdot$  Additional toxicological information:

The product shows the following dangers according to internally approved calculation methods for preparations: Harmful

Irritant

#### · Carcinogenic categories

· IARC (Internatio	onal Agency for Research on Cancer)	
CAS: 1309-37-1	diiron trioxide	3
CAS: 7631-86-9	silicon dioxide, chemically prepared	3
· NTP (National 1	Foxicology Program)	
None of the ingre	edients is listed.	
· OSHA-Ca (Occu	pational Safety & Health Administration)	
None of the ingre	edients is listed.	

## 12 Ecological information

- · Toxicity
- · Aquatic toxicity: No further relevant information available.
- · Persistence and degradability No further relevant information available.
- · Behavior in environmental systems:
- · Bioaccumulative potential No further relevant information available.
- · Mobility in soil No further relevant information available.
- Additional ecological information:
- · General notes:
- Water hazard class 1 (Self-assessment): slightly hazardous for water

Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.

- · Results of PBT and vPvB assessment
- *PBT*: Not applicable.
- *vPvB*: Not applicable.
- · Other adverse effects No further relevant information available.

#### 13 Disposal considerations

- · Waste treatment methods
- · Recommendation:

Dispose of contents in accordance with local/regional/national, and international recommendations.

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· Uncleaned packagings:

·Recommendation:

Dispose of container in acoordance with local/regional/national and international recommendations.

· UN-Number · DOT, ADN, IMDG, IATA	not regulated	
· UN proper shipping name · DOT, ADN, IMDG, IATA	not regulated	
· Transport hazard class(es)		
· DOT, ADN, IMDG, IATA · Class	not regulated	
· Packing group · DOT, IMDG, IATA	not regulated	
· Environmental hazards:	Not applicable.	
Special precautions for user	Not applicable.	
• Transport in bulk according to Annex MARPOL73/78 and the IBC Code	<i>II of</i> Not applicable.	
· UN "Model Regulation":	not regulated	

## 15 Regulatory information

• Safety, health and environmental regulations/legislation specific for the substance or mixture No further relevant information available.

· Sara

• Section 355 (extremely hazardous substances):

None of the ingredients is listed.

• Section 313 (Specific toxic chemical listings):

None of the ingredients is listed.

• TSCA (Toxic Substances Control Act):

All components have the value ACTIVE.

• Hazardous Air Pollutants

None of the ingredients is listed.

· Proposition 65

• Chemicals known to cause cancer:

None of the ingredients is listed.

· Chemicals known to cause reproductive toxicity for females:

None of the ingredients is listed.

· Chemicals known to cause reproductive toxicity for males:

None of the ingredients is listed.

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Chemicals known to cause developmental toxicity:	(Contd. of page
· ·	
None of the ingredients is listed.	
Carcinogenic categories	
EPA (Environmental Protection Agency)	
None of the ingredients is listed.	
TLV (Threshold Limit Value)	
CAS: 1309-37-1 diiron trioxide	А
NIOSH-Ca (National Institute for Occupational Safety and Health)	i
None of the ingredients is listed.	
GHS label elements The product is classified and labeled according to the Globally Harm Hazard pictograms GHS07 Signal word Warning	ionized System (GHS).
Hazard-determining components of labeling: guanidinium chlorideHazard statementsHarmful if swallowed. Causes skin irritation. Causes serious eye irritation.	
Precautionary statements Wash thoroughly after handling. Do not eat, drink or smoke when using this product.	
Wear eye protection / face protection. If swallowed: Call a poison center/doctor if you feel unwell.	
Rinse mouth. If on skin: Wash with plenty of water. Specific treatment (see on this label).	
If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if prese Continue rinsing. If skin irritation occurs: Get medical advice/attention.	ent and easy to do.
Take off contaminated clothing and wash it before reuse. If eye irritation persists: Get medical advice/attention.	
Dispose of contents/container in accordance with local/regional/national/international regu <i>Chemical safety assessment:</i> A Chemical Safety Assessment has not been carried out.	lations.

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: Zymo Research Corp. Safety Department
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USA
Phone: 1-949-679-1190 or 1-888-882-9682
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Date of preparation / last revision 06/19/2023
Abbreviations and acronyms: 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

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DOT: US Department of Transportation	
IATA: International Air Transport Association	
EINECS: European Inventory of Existing Commercial Chemical Substances	
ELINCS: European List of Notified Chemical Substances	
CAS: Chemical Abstracts Service (division of the American Chemical Society)	
NFPA: National Fire Protection Association (USA)	
HMIS: Hazardous Materials Identification System (USA)	
VOC: Volatile Organic Compounds (USA, EU)	
LC50: Lethal concentration, 50 percent	
LD50: Lethal dose, 50 percent	
PBT: Persistent, Bioaccumulative and Toxic	
vPvB: very Persistent and very Bioaccumulative	
NIOSH: National Institute for Occupational Safety	
OSHA: Occupational Safety & Health	
TLV: Threshold Limit Value	
PEL: Permissible Exposure Limit	
REL: Recommended Exposure Limit	
Acute Toxicity - Oral 4: Acute toxicity – Category 4	
Skin Irritation 2: Skin corrosion/irritation – Category 2	
Eye Irritation 2A: Serious eye damage/eye irritation – Category 2A	
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