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20.09.2021

Kit components

Product code	Description
D5032-E, D5033-E	**EZ-96 DNA Methylation-Lightning Kit, 2 x 96 Rxns.**

Components:

D5030-1	Lightning Conversion Reagent
D5001-3	M-Binding Buffer
D5001-4	M-Wash Buffer
D5030-5	L-Desulphonation Buffer
D5001-6	M-Elution Buffer

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

Printing date 20.09.2021 *Revision: 15.03.2021*

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

· ***1.1 Product identifier***

· ***Trade name: Lightning Conversion Reagent***

· ***Article number:*** D5030-1, D5032-1, D5030-1 & D5032-1
· ***1.2 Relevant identified uses of the substance or mixture and uses advised against***
No further relevant information available.
· ***Application of the substance / the mixture*** Laboratory Reagent

· ***1.3 Details of the supplier of the safety data sheet***
· ***Manufacturer/Supplier:***
Zymo Research Corp.
17062 Murphy Ave.
Irvine, CA 92614
USA
1-949-679-1190 or 1-888-882-9682
sds@zymoresearch.com

· ***Further information obtainable from:*** Product Safety Department
· ***1.4 Emergency telephone number:***
During normal business hours (8 am to 5 pm Pacific Standard Time): +1 (949) 679 1190

SECTION 2: Hazards identification

· ***2.1 Classification of the substance or mixture***
· ***Classification according to Regulation (EC) No 1272/2008***

GHS05 corrosion

Skin Corr. 1C H314 Causes severe skin burns and eye damage.
Eye Dam. 1 H318 Causes serious eye damage.

GHS07

Acute Tox. 4 H302 Harmful if swallowed.
Acute Tox. 4 H312 Harmful in contact with skin.
Acute Tox. 4 H332 Harmful if inhaled.

· ***2.2 Label elements***
· ***Labelling according to Regulation (EC) No 1272/2008***
The product is classified and labelled according to the CLP regulation.
· ***Hazard pictograms*** GHS05, GHS07
· ***Signal word*** Danger

· ***Hazard-determining components of labelling:***
Ammonium bisulfite 45% aqueous solution
· ***Hazard statements***
H302+H312+H332 Harmful if swallowed, in contact with skin or if inhaled.
H314 Causes severe skin burns and eye damage.

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· ***Precautionary statements***

P101	If medical advice is needed, have product container or label at hand.
P102	Keep out of reach of children.
P103	Read label before use.
P303+P361+P353	IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or shower].
P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P310	Immediately call a POISON CENTER/doctor.
P321	Specific treatment (see on this label).
P362+P364	Take off contaminated clothing and wash it before reuse.
P501	Dispose of contents/container in accordance with local/regional/national/international regulations.

· ***Additional information:***
EUH031 Contact with acids liberates toxic gas.
· ***2.3 Other hazards***
· ***Results of PBT and vPvB assessment***
· ***PBT:*** Not applicable.
· ***vPvB:*** Not applicable.

SECTION 3: Composition/information on ingredients

· ***3.2 Chemical characterisation: Mixtures***
· ***Description:*** Mixture of substances listed below with nonhazardous additions.

· ***Dangerous components:***

CAS: 10192-30-0 EINECS: 233-469-7	Ammonium bisulfite 45% aqueous solution Skin Corr. 1C, H314; Acute Tox. 4, H302; Acute Tox. 4, H312; Acute Tox. 4, H332; Eye Irrit. 2, H319	50-100%

· ***Additional information:*** For the wording of the listed hazard phrases refer to section 16.

SECTION 4: First aid measures

· ***4.1 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:*** In case of unconsciousness place patient stably in side position for transportation.
· ***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; call for medical help immediately.
Call for a doctor immediately.
Drink plenty of water and provide fresh air. Call for a doctor immediately.
· ***4.2 Most important symptoms and effects, both acute and delayed*** No further relevant information available.
· ***4.3 Indication of any immediate medical attention and special treatment needed***
No further relevant information available.

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SECTION 5: Firefighting measures

· ***5.1 Extinguishing media***
· ***Suitable extinguishing agents:***
Use fire extinguishing methods suitable to surrounding conditions.
CO2, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
· ***5.3 Advice for firefighters***
· ***Protective equipment:*** Mouth respiratory protective device.

SECTION 6: Accidental release measures

· ***6.1 Personal precautions, protective equipment and emergency procedures*** Mount respiratory protective device.
· ***6.2 Environmental precautions:***
Dilute with plenty of water.
Do not allow to enter sewers/ surface or ground water.
· ***6.3 Methods and material for containment and cleaning up:***
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
Dispose contaminated material as waste according to item 13.
Ensure adequate ventilation.
· ***6.4 Reference to other sections***
See Section 7 for information on safe handling.
See Section 8 for information on personal protection equipment.
See Section 13 for disposal information.

SECTION 7: Handling and storage

· ***7.1 Precautions for safe handling***
Ensure good ventilation/exhaustion at the workplace.
Prevent formation of aerosols.
· ***Information about fire - and explosion protection:*** No special measures required.

· ***7.2 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:*** Do not store together with acids.
· ***Further information about storage conditions:*** Keep container tightly sealed.
· ***7.3 Specific end use(s)*** Laboratory reagent

SECTION 8: Exposure controls/personal protection

· ***8.1 Control parameters***
· ***Additional information about design of technical facilities:*** No further data; see item 7.
· ***Ingredients with limit values that require monitoring at the workplace:***
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 valid during the making were used as basis.

· ***8.2 Exposure controls***
· ***Personal protective equipment:***
· ***General protective and hygienic measures:***
Keep away from foodstuffs, beverages and feed.
Immediately remove all soiled and contaminated clothing

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Wash hands before breaks and at the end of work.
Avoid contact with the eyes and skin.

· ***Respiratory protection:***
In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use self-contained respiratory protective device.

· ***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.
Use appropiate gloves. Avoid contact with skin.

· ***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

SECTION 9: Physical and chemical properties

· ***9.1 Information on basic physical and chemical properties***	
· ***General Information***	
· ***Appearance:***	
Form:	Liquid
Colour:	Clear light yellow
· ***Odour:***	Pungent
· ***Odour threshold:***	Not determined.
· ***pH-value at 20 °C:***	<6
· ***Change in condition***	
Melting point/freezing point:	Undetermined.
Initial boiling point and boiling range:	Undetermined.
· ***Flash point:***	Not applicable.
· ***Flammability (solid, gas):***	Not applicable.
· ***Decomposition temperature:***	Not determined.
· ***Auto-ignition temperature:***	Product is not selfigniting.
· ***Explosive properties:***	Product does not present an explosion hazard.
· ***Explosion limits:***	
Lower:	Not determined.

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Upper:	Not determined.
· ***Vapour pressure:***	Not determined.
· ***Density:***	Not determined.
· ***Relative density***	Not determined.
· ***Vapour density***	Not determined.
· ***Evaporation rate***	Not determined.
· ***Solubility in / Miscibility with water:***	Fully miscible.
· ***Partition coefficient: n-octanol/water:***	Not determined.
· ***Viscosity:***	
Dynamic:	Not determined.
Kinematic:	Not determined.
· ***Solvent content:***	
VOC (EC)	0.00 %
Solids content:	0.0 %
· ***9.2 Other information***	No further relevant information available.

SECTION 10: Stability and reactivity

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

SECTION 11: Toxicological information

· ***11.1 Information on toxicological effects***
· ***Acute toxicity***
Harmful if swallowed, in contact with skin or if inhaled.
· ***Primary irritant effect:***
· ***Skin corrosion/irritation***
Causes severe skin burns and eye damage.
· ***Serious eye damage/irritation***
Causes serious eye damage.
· ***Respiratory or skin sensitisation*** Based on available data, the classification criteria are not met.
· ***Additional toxicological information:***
· ***CMR effects (carcinogenity, mutagenicity and toxicity for reproduction)***
· ***Germ cell mutagenicity*** Based on available data, the classification criteria are not met.
· ***Carcinogenicity*** Based on available data, the classification criteria are not met.
· ***Reproductive toxicity*** Based on available data, the classification criteria are not met.
· ***STOT-single exposure*** Based on available data, the classification criteria are not met.
· ***STOT-repeated exposure*** Based on available data, the classification criteria are not met.

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· ***Aspiration hazard*** Based on available data, the classification criteria are not met.

SECTION 12: Ecological information

· ***12.1 Toxicity***
· ***Aquatic toxicity:*** No further relevant information available.
· ***12.2 Persistence and degradability*** No further relevant information available.
· ***12.3 Bioaccumulative potential*** No further relevant information available.
· ***12.4 Mobility in soil*** No further relevant information available.
· ***Additional ecological information:***
· ***General notes:***
Water hazard class 2 (German Regulation) (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.
· ***12.5 Results of PBT and vPvB assessment***
· ***PBT:*** Not applicable.
· ***vPvB:*** Not applicable.
· ***12.6 Other adverse effects*** No further relevant information available.

SECTION 13: Disposal considerations

· ***13.1 Waste treatment methods***
· ***Recommendation***
Must not be disposed together with household garbage. Do not allow product to reach sewage system.

· ***Uncleaned packaging:***
· ***Recommendation:*** Disposal must be made according to official regulations.
· ***Recommended cleansing agents:*** Water, if necessary together with cleansing agents.

SECTION 14: Transport information

· ***14.1 UN-Number***	
· ***ADR, IMDG, IATA***	UN3265
· ***14.2 UN proper shipping name***	
· ***ADR***	3265 CORROSIVE LIQUID, ACIDIC, ORGANIC, N.O.S. (Ammonium bisulfite 45% aqueous solution)
· ***IMDG, IATA***	CORROSIVE LIQUID, ACIDIC, ORGANIC, N.O.S. (Ammonium bisulfite 45% aqueous solution)
· ***14.3 Transport hazard class(es)***	
· ***ADR, IMDG, IATA***	
· ***Class***	8 Corrosive substances.
· ***Label***	8
· ***14.4 Packing group***	
· ***ADR, IMDG, IATA***	III

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· ***14.5 Environmental hazards:***	Not applicable.
· ***14.6 Special precautions for user***	Warning: Corrosive substances.
· ***Hazard identification number (Kemler code):***	80
· ***EMS Number:***	F-A,S-B
· ***Segregation groups***	Acids
· ***Stowage Category***	A
· ***Stowage Code***	SW2 Clear of living quarters.
· ***14.7 Transport in bulk according to Annex II of Marpol and the IBC Code***	Not applicable.
· ***Transport/Additional information:***	
· ***ADR***	
· ***Limited quantities (LQ)***	5L
· ***Excepted quantities (EQ)***	Code: E1 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 1000 ml
· ***Transport category***	3
· ***Tunnel restriction code***	E
· ***IMDG***	
· ***Limited quantities (LQ)***	5L
· ***Excepted quantities (EQ)***	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

SECTION 15: Regulatory information

· ***15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture***

· ***Directive 2012/18/EU***
· ***Named dangerous substances - ANNEX I*** None of the ingredients is listed.
· ***REGULATION (EC) No 1907/2006 ANNEX XVII*** Conditions of restriction: 3

· ***DIRECTIVE 2011/65/EU on the restriction of the use of certain hazardous substances in electrical and electronic equipment – Annex II***

None of the ingredients is listed.

· ***REGULATION (EU) 2019/1148***

· ***Annex I - RESTRICTED EXPLOSIVES PRECURSORS (Upper limit value for the purpose of licensing under Article 5(3))***

None of the ingredients is listed.

· ***Annex II - REPORTABLE EXPLOSIVES PRECURSORS***

None of the ingredients is listed.

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

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SECTION 16: Other information

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

· ***Relevant phrases***
H302 Harmful if swallowed.
H312 Harmful in contact with skin.
H314 Causes severe skin burns and eye damage.
H319 Causes serious eye irritation.
H332 Harmful if inhaled.

· ***Department issuing SDS:***
Zymo Research Corp.
Safety Department
17062 Murphy Ave.
Irvine, CA 92614
USA
1-949-679-1190 or 1-888-882-9682
· ***Contact:*** sds@zymoresearch.com
· ***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
IATA: International Air Transport Association
GHS: Globally Harmonised System of Classification and Labelling of Chemicals
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)
VOC: Volatile Organic Compounds (USA, EU)
PBT: Persistent, Bioaccumulative and Toxic
vPvB: very Persistent and very Bioaccumulative
Acute Tox. 4: Acute toxicity – Category 4
Skin Corr. 1C: Skin corrosion/irritation – Category 1C
Eye Dam. 1: Serious eye damage/eye irritation – Category 1
Eye Irrit. 2: Serious eye damage/eye irritation – Category 2

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

· ***1.1 Product identifier***

· ***Trade name: M-Binding Buffer***

· ***Article number:*** D5001-3, D5002-3, D5005-3, D5006-3, D5040-3
· ***1.2 Relevant identified uses of the substance or mixture and uses advised against***
No further relevant information available.
· ***Application of the substance / the mixture*** Laboratory Reagent

· ***1.3 Details of the supplier of the safety data sheet***
· ***Manufacturer/Supplier:***
Zymo Research Corp.
17062 Murphy Ave.
Irvine, CA 92614
USA
1-949-679-1190 or 1-888-882-9682
sds@zymoresearch.com

· ***Further information obtainable from:*** Product Safety Department
· ***1.4 Emergency telephone number:***
During normal business hours (8 am to 5 pm Pacific Standard Time): +1 (949) 679 1190

SECTION 2: Hazards identification

· ***2.1 Classification of the substance or mixture***
· ***Classification according to Regulation (EC) No 1272/2008***

GHS07

Acute Tox. 4 H302 Harmful if swallowed.
Skin Irrit. 2 H315 Causes skin irritation.
Eye Irrit. 2 H319 Causes serious eye irritation.

· ***2.2 Label elements***
· ***Labelling according to Regulation (EC) No 1272/2008***
The product is classified and labelled according to the CLP regulation.
· ***Hazard pictograms*** GHS07
· ***Signal word*** Warning

· ***Hazard-determining components of labelling:***
guanidinium chloride
· ***Hazard statements***
H302 Harmful if swallowed.
H315 Causes skin irritation.
H319 Causes serious eye irritation.
· ***Precautionary statements***
P101 If medical advice is needed, have product container or label at hand.
P102 Keep out of reach of children.
P103 Read label before use.
P280 Wear protective gloves / eye protection / face protection.

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P301+P312	IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell.
P330	Rinse mouth.
P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P332+P313	If skin irritation occurs: Get medical advice/attention.
P501	Dispose of contents/container in accordance with local/regional/national/international regulations.

· ***2.3 Other hazards***
· ***Results of PBT and vPvB assessment***
· ***PBT:*** Not applicable.
· ***vPvB:*** Not applicable.

SECTION 3: Composition/information on ingredients

· ***3.2 Chemical characterisation: Mixtures***
· ***Description:*** Mixture of substances listed below with nonhazardous additions.

· ***Dangerous components:***

CAS: 50-01-1 EINECS: 200-002-3 Index number: 607-148-00-0	guanidinium chloride Acute Tox. 4, H302; Skin Irrit. 2, H315; Eye Irrit. 2, H319	50-100%

· ***Additional information:*** For the wording of the listed hazard phrases refer to section 16.

SECTION 4: First aid measures

· ***4.1 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:*** In case of unconsciousness place patient stably in side position for transportation.
· ***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; call for medical help immediately.
Call for a doctor immediately.
Drink plenty of water and provide fresh air. Call for a doctor immediately.
· ***4.2 Most important symptoms and effects, both acute and delayed*** No further relevant information available.
· ***4.3 Indication of any immediate medical attention and special treatment needed***
No further relevant information available.

SECTION 5: Firefighting measures

· ***5.1 Extinguishing media***
· ***Suitable extinguishing agents:***
CO2, powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
Use fire extinguishing methods suitable to surrounding conditions.

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· ***5.3 Advice for firefighters***
· ***Protective equipment:*** Wear protective clothing.

SECTION 6: Accidental release measures

· ***6.1 Personal precautions, protective equipment and emergency procedures*** Wear protective clothing.
· ***6.2 Environmental precautions:***
Dilute with plenty of water.
Do not allow to enter sewers/ surface or ground water.
· ***6.3 Methods and material for containment and cleaning up:***
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
Dispose contaminated material as waste according to item 13.
Ensure adequate ventilation.
· ***6.4 Reference to other sections***
See Section 7 for information on safe handling.
See Section 8 for information on personal protection equipment.
See Section 13 for disposal information.

SECTION 7: Handling and storage

· ***7.1 Precautions for safe handling***
Ensure good ventilation/exhaustion at the workplace.
Prevent formation of aerosols.
· ***Information about fire - and explosion protection:*** No special measures required.

· ***7.2 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 container tightly sealed.
· ***7.3 Specific end use(s)*** Laboratory reagent

SECTION 8: Exposure controls/personal protection

· ***8.1 Control parameters***
· ***Additional information about design of technical facilities:*** No further data; see item 7.
· ***Ingredients with limit values that require monitoring at the workplace:***
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 valid during the making were used as basis.

· ***8.2 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.
· ***Respiratory protection:***
In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use self-contained respiratory protective device.

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Trade name: M-Binding Buffer

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· ***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.
Use appropiate gloves. Avoid contact with skin.

· ***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

SECTION 9: Physical and chemical properties

· ***9.1 Information on basic physical and chemical properties***	
· ***General Information***	
· ***Appearance:***	
Form:	Liquid
Colour:	Clear
· ***Odour:***	Undistinguishable.
· ***Odour threshold:***	Not determined.
· ***pH-value:***	Not determined.
· ***Change in condition***	
Melting point/freezing point:	Undetermined.
Initial boiling point and boiling range:	Undetermined.
· ***Flash point:***	Not applicable.
· ***Flammability (solid, gas):***	Not applicable.
· ***Decomposition temperature:***	Not determined.
· ***Auto-ignition temperature:***	Product is not selfigniting.
· ***Explosive properties:***	Product does not present an explosion hazard.
· ***Explosion limits:***	
Lower:	Not determined.
Upper:	Not determined.
· ***Vapour pressure:***	Not determined.
· ***Density:***	Not determined.
· ***Relative density***	Not determined.

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· ***Vapour density***	Not determined.
· ***Evaporation rate***	Not determined.
· ***Solubility in / Miscibility with water:***	Fully miscible.
· ***Partition coefficient: n-octanol/water:***	Not determined.
· ***Viscosity:***	
Dynamic:	Not determined.
Kinematic:	Not determined.
· ***Solvent content:***	
VOC (EC)	0.00 %
Solids content:	30.0 %
· ***9.2 Other information***	No further relevant information available.

SECTION 10: Stability and reactivity

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

SECTION 11: Toxicological information

· ***11.1 Information on toxicological effects***
· ***Acute toxicity***
Harmful if swallowed.

· ***LD/LC50 values relevant for classification:***		
CAS: 50-01-1 guanidinium chloride		
Oral	LD50	475 mg/kg (rat)

· ***Primary irritant effect:***
· ***Skin corrosion/irritation***
Causes skin irritation.
· ***Serious eye damage/irritation***
Causes serious eye irritation.
· ***Respiratory or skin sensitisation*** Based on available data, the classification criteria are not met.
· ***Additional toxicological information:***
· ***CMR effects (carcinogenity, mutagenicity and toxicity for reproduction)***
· ***Germ cell mutagenicity*** Based on available data, the classification criteria are not met.
· ***Carcinogenicity*** Based on available data, the classification criteria are not met.
· ***Reproductive toxicity*** Based on available data, the classification criteria are not met.
· ***STOT-single exposure*** Based on available data, the classification criteria are not met.
· ***STOT-repeated exposure*** Based on available data, the classification criteria are not met.
· ***Aspiration hazard*** Based on available data, the classification criteria are not met.

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Printing date 20.09.2021 *Revision: 15.03.2021*

Trade name: M-Binding Buffer

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SECTION 12: Ecological information

· ***12.1 Toxicity***
· ***Aquatic toxicity:*** No further relevant information available.
· ***12.2 Persistence and degradability*** No further relevant information available.
· ***12.3 Bioaccumulative potential*** No further relevant information available.
· ***12.4 Mobility in soil*** No further relevant information available.
· ***Additional ecological information:***
· ***General notes:***
Water hazard class 1 (German Regulation) (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.
· ***12.5 Results of PBT and vPvB assessment***
· ***PBT:*** Not applicable.
· ***vPvB:*** Not applicable.
· ***12.6 Other adverse effects*** No further relevant information available.

SECTION 13: Disposal considerations

· ***13.1 Waste treatment methods***
· ***Recommendation***
Must not be disposed together with household garbage. Do not allow product to reach sewage system.

· ***Uncleaned packaging:***
· ***Recommendation:*** Disposal must be made according to official regulations.
· ***Recommended cleansing agents:*** Water, if necessary together with cleansing agents.

SECTION 14: Transport information

· ***14.1 UN-Number***	
· ***ADR, ADN, IMDG, IATA***	not regulated
· ***14.2 UN proper shipping name***	
· ***ADR, ADN, IMDG, IATA***	not regulated
· ***14.3 Transport hazard class(es)***	
· ***ADR, ADN, IMDG, IATA***	
· ***Class***	not regulated
· ***14.4 Packing group***	
· ***ADR, IMDG, IATA***	not regulated
· ***14.5 Environmental hazards:***	Not applicable.
· ***14.6 Special precautions for user***	Not applicable.
· ***14.7 Transport in bulk according to Annex II of Marpol and the IBC Code***	Not applicable.
· ***UN "Model Regulation":***	not regulated

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Printing date 20.09.2021 *Revision: 15.03.2021*

Trade name: M-Binding Buffer

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SECTION 15: Regulatory information

· ***15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture***

· ***Directive 2012/18/EU***
· ***Named dangerous substances - ANNEX I*** None of the ingredients is listed.
· ***REGULATION (EC) No 1907/2006 ANNEX XVII*** Conditions of restriction: 3

· ***DIRECTIVE 2011/65/EU on the restriction of the use of certain hazardous substances in electrical and electronic equipment – Annex II***

None of the ingredients is listed.

· ***REGULATION (EU) 2019/1148***

· ***Annex I - RESTRICTED EXPLOSIVES PRECURSORS (Upper limit value for the purpose of licensing under Article 5(3))***

None of the ingredients is listed.

· ***Annex II - REPORTABLE EXPLOSIVES PRECURSORS***

None of the ingredients is listed.

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

SECTION 16: Other information

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

· ***Relevant phrases***
H302 Harmful if swallowed.
H315 Causes skin irritation.
H319 Causes serious eye irritation.

· ***Department issuing SDS:***
Zymo Research Corp.
Safety Department
17062 Murphy Ave.
Irvine, CA 92614
USA
1-949-679-1190 or 1-888-882-9682
· ***Contact:*** sds@zymoresearch.com
· ***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
IATA: International Air Transport Association
GHS: Globally Harmonised System of Classification and Labelling of Chemicals
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)
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
Acute Tox. 4: Acute toxicity – Category 4
Skin Irrit. 2: Skin corrosion/irritation – Category 2
Eye Irrit. 2: Serious eye damage/eye irritation – Category 2

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Printing date 20.09.2021 *Revision: 15.03.2021*

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

· ***1.1 Product identifier***

· ***Trade name: M-Wash Buffer***

· ***Article number:*** D5001-4, D5002-4, D5007-4, D5040-4
· ***1.2 Relevant identified uses of the substance or mixture and uses advised against***
No further relevant information available.
· ***Application of the substance / the mixture*** Laboratory Reagent

· ***1.3 Details of the supplier of the safety data sheet***
· ***Manufacturer/Supplier:***
Zymo Research Corp.
17062 Murphy Ave.
Irvine, CA 92614
USA
1-949-679-1190 or 1-888-882-9682
sds@zymoresearch.com

· ***Further information obtainable from:***
Product Safety Department
Safety
· ***1.4 Emergency telephone number:***
During normal business hours (8 am to 5 pm Pacific Standard Time): +1 (949) 679 1190

SECTION 2: Hazards identification

· ***2.1 Classification of the substance or mixture***
· ***Classification according to Regulation (EC) No 1272/2008***
The product is not classified, according to the CLP regulation.

· ***2.2 Label elements***
· ***Labelling according to Regulation (EC) No 1272/2008*** Void
· ***Hazard pictograms*** Void
· ***Signal word*** Void
· ***Hazard statements*** Void
· ***2.3 Other hazards***
· ***Results of PBT and vPvB assessment***
· ***PBT:*** Not applicable.
· ***vPvB:*** Not applicable.

SECTION 3: Composition/information on ingredients

· ***3.2 Chemical characterisation: Mixtures***
· ***Description:*** Mixture of substances listed below with nonhazardous additions.

· ***Dangerous components:*** Void
· ***Additional information:*** For the wording of the listed hazard phrases refer to section 16.

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Trade name: M-Wash Buffer

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SECTION 4: First aid measures

· ***4.1 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:*** Immediately wash with water and soap and rinse throughly.
· ***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:*** If symptoms persist consult doctor.
· ***4.2 Most important symptoms and effects, both acute and delayed*** No further relevant information available.
· ***4.3 Indication of any immediate medical attention and special treatment needed***
No further relevant information available.

SECTION 5: Firefighting measures

· ***5.1 Extinguishing media***
· ***Suitable extinguishing agents:***
CO2, powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
Use fire extinguishing methods suitable to surrounding conditions.
· ***5.3 Advice for firefighters***
· ***Protective equipment:*** Wear protective clothing.

SECTION 6: Accidental release measures

· ***6.1 Personal precautions, protective equipment and emergency procedures*** Wear protective clothing.
· ***6.2 Environmental precautions:*** Dilute with plenty of water.
· ***6.3 Methods and material for containment and cleaning up:***
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
· ***6.4 Reference to other sections***
See Section 7 for information on safe handling.
See Section 8 for information on personal protection equipment.
See Section 13 for disposal information.

SECTION 7: Handling and storage

· ***7.1 Precautions for safe handling*** No special measures required.
· ***Information about fire - and explosion protection:*** No special measures required.

· ***7.2 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 receptable tightly sealed.
· ***7.3 Specific end use(s)*** Laboratory reagent

SECTION 8: Exposure controls/personal protection

· ***8.1 Control parameters***
· ***Additional information about design of technical facilities:*** No further data; see item 7.

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Trade name: M-Wash Buffer

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· ***Ingredients 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 valid during the making were used as basis.

· ***8.2 Exposure controls***
· ***Personal protective equipment:***
· ***General protective and hygienic measures:***
The usual precautionary measures are to be adhered to when handling chemicals.
· ***Respiratory protection:*** 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.
Use appropiate gloves. Avoid contact with skin.
· ***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:*** Avoid contact with eyes.

SECTION 9: Physical and chemical properties

· ***9.1 Information on basic physical and chemical properties***	
· ***General Information***	
· ***Appearance:***	
Form:	Liquid
Colour:	Clear
· ***Odour:***	Odourless
· ***Odour threshold:***	Not determined.
· ***pH-value:***	Not determined.
· ***Change in condition***	
Melting point/freezing point:	Undetermined.
Initial boiling point and boiling range:	Undetermined.
· ***Flash point:***	Not applicable.
· ***Flammability (solid, gas):***	Not applicable.
· ***Decomposition temperature:***	Not determined.
· ***Auto-ignition temperature:***	Product is not selfigniting.
· ***Explosive properties:***	Product does not present an explosion hazard.
· ***Explosion limits:***	
Lower:	Not determined.
Upper:	Not determined.
· ***Vapour pressure at 20 °C:***	23 hPa
· ***Density:***	Not determined.
· ***Relative density***	Not determined.

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Trade name: M-Wash Buffer

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· ***Vapour density***	Not determined.
· ***Evaporation rate***	Not determined.
· ***Solubility in / Miscibility with water:***	Fully miscible.
· ***Partition coefficient: n-octanol/water:***	Not determined.
· ***Viscosity:***	
Dynamic:	Not determined.
Kinematic:	Not determined.
· ***Solvent content:***	
VOC (EC)	0.00 %
Solids content:	0.0 %
· ***9.2 Other information***	No further relevant information available.

SECTION 10: Stability and reactivity

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

SECTION 11: Toxicological information

· ***11.1 Information on toxicological effects***
· ***Acute toxicity*** Based on available data, the classification criteria are not met.
· ***Primary irritant effect:***
· ***Skin corrosion/irritation*** Based on available data, the classification criteria are not met.
· ***Serious eye damage/irritation*** Based on available data, the classification criteria are not met.
· ***Respiratory or skin sensitisation*** Based on available data, the classification criteria are not met.
· ***Additional toxicological information:***
· ***CMR effects (carcinogenity, mutagenicity and toxicity for reproduction)***
· ***Germ cell mutagenicity*** Based on available data, the classification criteria are not met.
· ***Carcinogenicity*** Based on available data, the classification criteria are not met.
· ***Reproductive toxicity*** Based on available data, the classification criteria are not met.
· ***STOT-single exposure*** Based on available data, the classification criteria are not met.
· ***STOT-repeated exposure*** Based on available data, the classification criteria are not met.
· ***Aspiration hazard*** Based on available data, the classification criteria are not met.

SECTION 12: Ecological information

· ***12.1 Toxicity***
· ***Aquatic toxicity:*** No further relevant information available.
· ***12.2 Persistence and degradability*** No further relevant information available.
· ***12.3 Bioaccumulative potential*** No further relevant information available.
· ***12.4 Mobility in soil*** No further relevant information available.

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Printing date 20.09.2021 *Revision: 15.03.2021*

Trade name: M-Wash Buffer

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· ***Additional ecological information:***
· ***General notes:*** Not known to be hazardous to water.
· ***12.5 Results of PBT and vPvB assessment***
· ***PBT:*** Not applicable.
· ***vPvB:*** Not applicable.
· ***12.6 Other adverse effects*** No further relevant information available.

SECTION 13: Disposal considerations

· ***13.1 Waste treatment methods***
· ***Recommendation*** Smaller quantities can be disposed of with household waste.

· ***Uncleaned packaging:***
· ***Recommendation:*** Disposal must be made according to official regulations.
· ***Recommended cleansing agents:*** Water, if necessary together with cleansing agents.

SECTION 14: Transport information

· ***14.1 UN-Number***	
· ***ADR, ADN, IMDG, IATA***	not regulated
· ***14.2 UN proper shipping name***	
· ***ADR, ADN, IMDG, IATA***	not regulated
· ***14.3 Transport hazard class(es)***	
· ***ADR, ADN, IMDG, IATA***	
· ***Class***	not regulated
· ***14.4 Packing group***	
· ***ADR, IMDG, IATA***	not regulated
· ***14.5 Environmental hazards:***	Not applicable.
· ***14.6 Special precautions for user***	Not applicable.
· ***14.7 Transport in bulk according to Annex II of Marpol and the IBC Code***	Not applicable.
· ***UN "Model Regulation":***	not regulated

SECTION 15: Regulatory information

· ***15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture***

· ***Directive 2012/18/EU***
· ***Named dangerous substances - ANNEX I*** None of the ingredients is listed.

· ***DIRECTIVE 2011/65/EU on the restriction of the use of certain hazardous substances in electrical and electronic equipment – Annex II***

None of the ingredients is listed.

· ***REGULATION (EU) 2019/1148***

· ***Annex I - RESTRICTED EXPLOSIVES PRECURSORS (Upper limit value for the purpose of licensing under Article 5(3))***

None of the ingredients is listed.

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Trade name: M-Wash Buffer

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· ***Annex II - REPORTABLE EXPLOSIVES PRECURSORS***

None of the ingredients is listed.

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

SECTION 16: Other information

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

· ***Department issuing SDS:***
Zymo Research Corp.
Safety Department
17062 Murphy Ave.
Irvine, CA 92614
USA
1-949-679-1190 or 1-888-882-9682

· ***Contact:*** sds@zymoresearch.com

· ***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
IATA: International Air Transport Association
GHS: Globally Harmonised System of Classification and Labelling of Chemicals
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)
VOC: Volatile Organic Compounds (USA, EU)
PBT: Persistent, Bioaccumulative and Toxic
vPvB: very Persistent and very Bioaccumulative

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

Printing date 20.09.2021 *Revision: 15.03.2021*

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

· ***1.1 Product identifier***

· ***Trade name: L-Desulphonation Buffer***

· ***Article number:*** D5030-5, D5031-5, D5046-5
· ***1.2 Relevant identified uses of the substance or mixture and uses advised against***
No further relevant information available.
· ***Application of the substance / the mixture*** Laboratory Reagent

· ***1.3 Details of the supplier of the safety data sheet***
· ***Manufacturer/Supplier:***
Zymo Research Corp.
17062 Murphy Ave.
Irvine, CA 92614
USA
1-949-679-1190 or 1-888-882-9682
sds@zymoresearch.com

· ***Further information obtainable from:*** Product Safety Department
· ***1.4 Emergency telephone number:***
During normal business hours (8 am to 5 pm Pacific Standard Time): +1 (949) 679 1190

SECTION 2: Hazards identification

· ***2.1 Classification of the substance or mixture***
· ***Classification according to Regulation (EC) No 1272/2008***

GHS02 flame

Flam. Liq. 3 H226 Flammable liquid and vapour.

GHS07

Skin Irrit. 2 H315 Causes skin irritation.
Eye Irrit. 2 H319 Causes serious eye irritation.
STOT SE 3 H336 May cause drowsiness or dizziness.

· ***2.2 Label elements***
· ***Labelling according to Regulation (EC) No 1272/2008***
The product is classified and labelled according to the CLP regulation.
· ***Hazard pictograms*** GHS02, GHS07
· ***Signal word*** Warning

· ***Hazard-determining components of labelling:***
propan-2-ol
· ***Hazard statements***
H226 Flammable liquid and vapour.
H315 Causes skin irritation.
H319 Causes serious eye irritation.

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Safety data sheet
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Trade name: L-Desulphonation Buffer

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H336 May cause drowsiness or dizziness.

· ***Precautionary statements***

P101	If medical advice is needed, have product container or label at hand.
P102	Keep out of reach of children.
P103	Read label before use.
P210	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P241	Use explosion-proof [electrical/ventilating/lighting] equipment.
P261	Avoid breathing dust/fume/gas/mist/vapours/spray.
P303+P361+P353	IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or shower].
P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P501	Dispose of contents/container in accordance with local/regional/national/international regulations.

· ***2.3 Other hazards***

· ***Results of PBT and vPvB assessment***

· ***PBT:*** Not applicable.

· ***vPvB:*** Not applicable.

SECTION 3: Composition/information on ingredients

· ***3.2 Chemical characterisation: Mixtures***

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

· ***Dangerous components:***

CAS: 64-17-5 EINECS: 200-578-6 Index number: 603-002-00-5	ethanol Flam. Liq. 2, H225	25-50%
CAS: 67-63-0 EINECS: 200-661-7 Index number: 603-117-00-0	propan-2-ol Flam. Liq. 2, H225; Eye Irrit. 2, H319; STOT SE 3, H336	25-50%
CAS: 1310-73-2 EINECS: 215-185-5 Index number: 011-002-00-6	sodium hydroxide Skin Corr. 1A, H314; Acute Tox. 4, H302	≤2.5%

· ***Additional information:*** For the wording of the listed hazard phrases refer to section 16.

SECTION 4: First aid measures

· ***4.1 Description of first aid measures***

· ***After inhalation:*** In case of unconsciousness place patient stably in side position for transportation.

· ***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:*** If symptoms persist consult doctor.

· ***4.2 Most important symptoms and effects, both acute and delayed*** No further relevant information available.

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

No further relevant information available.

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

Printing date 20.09.2021 *Revision: 15.03.2021*

Trade name: L-Desulphonation Buffer

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SECTION 5: Firefighting measures

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

SECTION 6: Accidental release measures

· ***6.1 Personal precautions, protective equipment and emergency procedures***
Wear protective equipment. Keep unprotected persons away.
· ***6.2 Environmental precautions:***
Dilute with plenty of water.
Do not allow to enter sewers/ surface or ground water.
· ***6.3 Methods and material for containment and cleaning up:***
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
Ensure adequate ventilation.
· ***6.4 Reference to other sections***
See Section 7 for information on safe handling.
See Section 8 for information on personal protection equipment.
See Section 13 for disposal information.

SECTION 7: Handling and storage

· ***7.1 Precautions for safe handling***
Ensure good ventilation/exhaustion at the workplace.
Prevent formation of aerosols.
· ***Information about fire - and explosion protection:***
Keep ignition sources away - Do not smoke.
Protect against electrostatic charges.

· ***7.2 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.
· ***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 container tightly sealed.
· ***7.3 Specific end use(s)*** Laboratory reagent

SECTION 8: Exposure controls/personal protection

· ***8.1 Control parameters***
Work under a chemical fume hood when using this product. Ensure eyewash station and safety showers are readily accessible.
· ***Additional information about design of technical facilities:*** No further data; see item 7.

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

Printing date 20.09.2021 *Revision: 15.03.2021*

Trade name: L-Desulphonation Buffer

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· ***Ingredients 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 valid during the making were used as basis.

· ***8.2 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.
· ***Respiratory protection:***
In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use self-contained respiratory protective device.
· ***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.
Use appropiate gloves. Avoid contact with skin.
· ***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

SECTION 9: Physical and chemical properties

· ***9.1 Information on basic physical and chemical properties***
· ***General Information***
· ***Appearance:***

Form:	Liquid
Colour:	Clear light yellow
· ***Odour:***	Alcohol-like
· ***Odour threshold:***	Not determined.
· ***pH-value:***	Not determined.
· ***Change in condition***	
Melting point/freezing point:	Undetermined.
Initial boiling point and boiling range:	78 °C

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

Printing date 20.09.2021 *Revision: 15.03.2021*

Trade name: L-Desulphonation Buffer

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· ***Flash point:***	<30 °C
· ***Flammability (solid, gas):***	Not applicable.
· ***Ignition temperature:***	425 °C
· ***Decomposition temperature:***	Not determined.
· ***Auto-ignition temperature:***	Product is not selfigniting.
· ***Explosive properties:***	Product is not explosive. However, formation of explosive air/vapour mixtures are possible.
· ***Explosion limits:***	
Lower:	2 Vol %
Upper:	15 Vol %
· ***Vapour pressure at 20 °C:***	59 hPa
· ***Density:***	Not determined.
· ***Relative density***	Not determined.
· ***Vapour density***	Not determined.
· ***Evaporation rate***	Not determined.
· ***Solubility in / Miscibility with water:***	Fully miscible.
· ***Partition coefficient: n-octanol/water:***	Not determined.
· ***Viscosity:***	
Dynamic:	Not determined.
Kinematic:	Not determined.
· ***Solvent content:***	
Organic solvents:	58.0 %
VOC (EC)	58.00 %
Solids content:	1.0 %
· ***9.2 Other information***	No further relevant information available.

SECTION 10: Stability and reactivity

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

SECTION 11: Toxicological information

· ***11.1 Information on toxicological effects***
· ***Acute toxicity*** Based on available data, the classification criteria are not met.

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· ***LD/LC50 values relevant for classification:***		
CAS: 1310-73-2 sodium hydroxide		
Oral	LD50	2,000 mg/kg (rat)

· ***Primary irritant effect:***
· ***Skin corrosion/irritation***
Causes skin irritation.
· ***Serious eye damage/irritation***
Causes serious eye irritation.
· ***Respiratory or skin sensitisation*** Based on available data, the classification criteria are not met.
· ***Additional toxicological information:***
· ***CMR effects (carcinogenity, mutagenicity and toxicity for reproduction)***
· ***Germ cell mutagenicity*** Based on available data, the classification criteria are not met.
· ***Carcinogenicity*** Based on available data, the classification criteria are not met.
· ***Reproductive toxicity*** Based on available data, the classification criteria are not met.
· ***STOT-single exposure***
May cause drowsiness or dizziness.
· ***STOT-repeated exposure*** Based on available data, the classification criteria are not met.
· ***Aspiration hazard*** Based on available data, the classification criteria are not met.

SECTION 12: Ecological information

· ***12.1 Toxicity***
· ***Aquatic toxicity:*** No further relevant information available.
· ***12.2 Persistence and degradability*** No further relevant information available.
· ***12.3 Bioaccumulative potential*** No further relevant information available.
· ***12.4 Mobility in soil*** No further relevant information available.
· ***Additional ecological information:***
· ***General notes:***
Water hazard class 1 (German Regulation) (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.
· ***12.5 Results of PBT and vPvB assessment***
· ***PBT:*** Not applicable.
· ***vPvB:*** Not applicable.
· ***12.6 Other adverse effects*** No further relevant information available.

SECTION 13: Disposal considerations

· ***13.1 Waste treatment methods***
· ***Recommendation***
Must not be disposed together with household garbage. Do not allow product to reach sewage system.

· ***Uncleaned packaging:***
· ***Recommendation:*** Disposal must be made according to official regulations.
· ***Recommended cleansing agents:*** Water, if necessary together with cleansing agents.

SECTION 14: Transport information

· ***14.1 UN-Number***
· ***ADR, IMDG, IATA*** UN1993

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· **14.2 UN proper shipping name**

· **ADR**	1993 FLAMMABLE LIQUID, N.O.S. (ETHANOL (ETHYL ALCOHOL), ISOPROPANOL (ISOPROPYL ALCOHOL))
· **IMDG**	FLAMMABLE LIQUID, N.O.S. (ETHANOL (ETHYL ALCOHOL), ISOPROPANOL (ISOPROPYL ALCOHOL))
· **IATA**	FLAMMABLE LIQUID, N.O.S. (ETHANOL, ISOPROPANOL (ISOPROPYL ALCOHOL))

· **14.3 Transport hazard class(es)**

· **ADR, IMDG, IATA**

· **Class**	3 Flammable liquids.
· **Label**	3

· **14.4 Packing group**

· **ADR, IATA**	III

· **14.5 Environmental hazards:**	Not applicable.

· **14.6 Special precautions for user**	Warning: Flammable liquids.
· **Hazard identification number (Kemler code):**	30
· **EMS Number:**	F-E,S-E
· **Stowage Category**	A

· **14.7 Transport in bulk according to Annex II of Marpol and the IBC Code**	Not applicable.

· **Transport/Additional information:**

· **ADR**

· **Limited quantities (LQ)**	5L
· **Excepted quantities (EQ)**	Code: E1 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 1000 ml
· **Transport category**	3
· **Tunnel restriction code**	D/E

· **IMDG**

· **Limited quantities (LQ)**	5L
· **Excepted quantities (EQ)**	Code: E1 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 1000 ml

· **UN "Model Regulation":**	UN 1993 FLAMMABLE LIQUID, N.O.S. (ETHANOL (ETHYL ALCOHOL), ISOPROPANOL (ISOPROPYL ALCOHOL)), 3, III

SECTION 15: Regulatory information

· **15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**

· **Directive 2012/18/EU**

· **Named dangerous substances - ANNEX I** None of the ingredients is listed.

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· ***Seveso category*** P5c FLAMMABLE LIQUIDS
· ***Qualifying quantity (tonnes) for the application of lower-tier requirements*** 5,000 t
· ***Qualifying quantity (tonnes) for the application of upper-tier requirements*** 50,000 t
· ***REGULATION (EC) No 1907/2006 ANNEX XVII*** Conditions of restriction: 3

· ***DIRECTIVE 2011/65/EU on the restriction of the use of certain hazardous substances in electrical and electronic equipment – Annex II***

None of the ingredients is listed.

· ***REGULATION (EU) 2019/1148***

· ***Annex I - RESTRICTED EXPLOSIVES PRECURSORS (Upper limit value for the purpose of licensing under Article 5(3))***

None of the ingredients is listed.

· ***Annex II - REPORTABLE EXPLOSIVES PRECURSORS***

None of the ingredients is listed.

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

SECTION 16: Other information

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

· ***Relevant phrases***
H225 Highly flammable liquid and vapour.
H302 Harmful if swallowed.
H314 Causes severe skin burns and eye damage.
H319 Causes serious eye irritation.
H336 May cause drowsiness or dizziness.

· ***Department issuing SDS:***
Zymo Research Corp.
Safety Department
17062 Murphy Ave.
Irvine, CA 92614
USA
1-949-679-1190 or 1-888-882-9682
· ***Contact:*** sds@zymoresearch.com
· ***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
IATA: International Air Transport Association
GHS: Globally Harmonised System of Classification and Labelling of Chemicals
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)
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
Flam. Liq. 2: Flammable liquids – Category 2
Flam. Liq. 3: Flammable liquids – Category 3
Acute Tox. 4: Acute toxicity – Category 4
Skin Corr. 1A: Skin corrosion/irritation – Category 1A
Skin Irrit. 2: Skin corrosion/irritation – Category 2
Eye Irrit. 2: Serious eye damage/eye irritation – Category 2
STOT SE 3: Specific target organ toxicity (single exposure) – Category 3

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

· ***1.1 Product identifier***

· ***Trade name: M-Elution Buffer***

· ***Article number:*** D5001-6, D5002-6, D5007-6, D5041-6
· ***1.2 Relevant identified uses of the substance or mixture and uses advised against***
No further relevant information available.
· ***Application of the substance / the mixture*** Laboratory Reagent

· ***1.3 Details of the supplier of the safety data sheet***
· ***Manufacturer/Supplier:***
Zymo Research Corp.
17062 Murphy Ave.
Irvine, CA 92614
USA
1-949-679-1190 or 1-888-882-9682
sds@zymoresearch.com

· ***Further information obtainable from:*** Product Safety Department
· ***1.4 Emergency telephone number:***
During normal business hours (8 am to 5 pm Pacific Standard Time): +1 (949) 679 1190

SECTION 2: Hazards identification

· ***2.1 Classification of the substance or mixture***
· ***Classification according to Regulation (EC) No 1272/2008***
The product is not classified, according to the CLP regulation.

· ***2.2 Label elements***
· ***Labelling according to Regulation (EC) No 1272/2008*** Void
· ***Hazard pictograms*** Void
· ***Signal word*** Void
· ***Hazard statements*** Void
· ***2.3 Other hazards***
· ***Results of PBT and vPvB assessment***
· ***PBT:*** Not applicable.
· ***vPvB:*** Not applicable.

SECTION 3: Composition/information on ingredients

· ***3.2 Chemical characterisation: Mixtures***
· ***Description:*** Mixture of substances listed below with nonhazardous additions.

· ***Dangerous components:*** Void
· ***Additional information:*** For the wording of the listed hazard phrases refer to section 16.

SECTION 4: First aid measures

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

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· ***After inhalation:*** Supply fresh air; consult doctor in case of complaints.
· ***After skin contact:*** Immediately wash with water and soap and rinse throughly.
· ***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:*** If symptoms persist consult doctor.
· ***4.2 Most important symptoms and effects, both acute and delayed*** No further relevant information available.
· ***4.3 Indication of any immediate medical attention and special treatment needed***
No further relevant information available.

SECTION 5: Firefighting measures

· ***5.1 Extinguishing media***
· ***Suitable extinguishing agents:***
CO2, powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
Use fire extinguishing methods suitable to surrounding conditions.
· ***5.3 Advice for firefighters***
· ***Protective equipment:*** Wear protective clothing.

SECTION 6: Accidental release measures

· ***6.1 Personal precautions, protective equipment and emergency procedures*** Wear protective clothing.
· ***6.2 Environmental precautions:***
Dilute with plenty of water.
Do not allow to enter sewers/ surface or ground water.
· ***6.3 Methods and material for containment and cleaning up:***
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
· ***6.4 Reference to other sections***
See Section 7 for information on safe handling.
See Section 8 for information on personal protection equipment.
See Section 13 for disposal information.

SECTION 7: Handling and storage

· ***7.1 Precautions for safe handling*** No special measures required.
· ***Information about fire - and explosion protection:*** No special measures required.

· ***7.2 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 receptable tightly sealed.
· ***7.3 Specific end use(s)*** Laboratory reagent

SECTION 8: Exposure controls/personal protection

· ***8.1 Control parameters***
· ***Additional information about design of technical facilities:*** No further data; see item 7.
· ***Ingredients with limit values that require monitoring at the workplace:***
The product does not contain any relevant quantities of materials with critical values that have to be monitored at the workplace.

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

· ***8.2 Exposure controls***
· ***Personal protective equipment:***
· ***General protective and hygienic measures:***
The usual precautionary measures are to be adhered to when handling chemicals.
· ***Respiratory protection:*** 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.
Use appropiate gloves. Avoid contact with skin.
· ***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:*** Avoid contact with eyes.

SECTION 9: Physical and chemical properties

· ***9.1 Information on basic physical and chemical properties***	
· ***General Information***	
· ***Appearance:***	
Form:	Liquid
Colour:	Clear
· ***Odour:***	Odourless
· ***Odour threshold:***	Not determined.
· ***pH-value:***	Not determined.
· ***Change in condition***	
Melting point/freezing point:	Undetermined.
Initial boiling point and boiling range:	Undetermined.
· ***Flash point:***	Not applicable.
· ***Flammability (solid, gas):***	Not applicable.
· ***Decomposition temperature:***	Not determined.
· ***Auto-ignition temperature:***	Product is not selfigniting.
· ***Explosive properties:***	Product does not present an explosion hazard.
· ***Explosion limits:***	
Lower:	Not determined.
Upper:	Not determined.
· ***Vapour pressure:***	Not determined.
· ***Density:***	Not determined.
· ***Relative density***	Not determined.
· ***Vapour density***	Not determined.
· ***Evaporation rate***	Not determined.

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· ***Solubility in / Miscibility with water:***	Fully miscible.
· ***Partition coefficient: n-octanol/water:***	Not determined.
· ***Viscosity:***	
Dynamic:	Not determined.
Kinematic:	Not determined.
· ***Solvent content:***	
VOC (EC)	0.00 %
Solids content:	2.0 %
· ***9.2 Other information***	No further relevant information available.

SECTION 10: Stability and reactivity

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

SECTION 11: Toxicological information

· ***11.1 Information on toxicological effects***
· ***Acute toxicity*** Based on available data, the classification criteria are not met.
· ***Primary irritant effect:***
· ***Skin corrosion/irritation*** Based on available data, the classification criteria are not met.
· ***Serious eye damage/irritation*** Based on available data, the classification criteria are not met.
· ***Respiratory or skin sensitisation*** Based on available data, the classification criteria are not met.
· ***Additional toxicological information:***
· ***CMR effects (carcinogenity, mutagenicity and toxicity for reproduction)***
· ***Germ cell mutagenicity*** Based on available data, the classification criteria are not met.
· ***Carcinogenicity*** Based on available data, the classification criteria are not met.
· ***Reproductive toxicity*** Based on available data, the classification criteria are not met.
· ***STOT-single exposure*** Based on available data, the classification criteria are not met.
· ***STOT-repeated exposure*** Based on available data, the classification criteria are not met.
· ***Aspiration hazard*** Based on available data, the classification criteria are not met.

SECTION 12: Ecological information

· ***12.1 Toxicity***
· ***Aquatic toxicity:*** No further relevant information available.
· ***12.2 Persistence and degradability*** No further relevant information available.
· ***12.3 Bioaccumulative potential*** No further relevant information available.
· ***12.4 Mobility in soil*** No further relevant information available.

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Trade name: M-Elution Buffer

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· ***Additional ecological information:***
· ***General notes:***
Water hazard class 1 (German Regulation) (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.
· ***12.5 Results of PBT and vPvB assessment***
· ***PBT:*** Not applicable.
· ***vPvB:*** Not applicable.
· ***12.6 Other adverse effects*** No further relevant information available.

SECTION 13: Disposal considerations

· ***13.1 Waste treatment methods***
· ***Recommendation*** Smaller quantities can be disposed of with household waste.

· ***Uncleaned packaging:***
· ***Recommendation:*** Disposal must be made according to official regulations.
· ***Recommended cleansing agents:*** Water, if necessary together with cleansing agents.

SECTION 14: Transport information

· ***14.1 UN-Number***	
· ***ADR, ADN, IMDG, IATA***	not regulated
· ***14.2 UN proper shipping name***	
· ***ADR, ADN, IMDG, IATA***	not regulated
· ***14.3 Transport hazard class(es)***	
· ***ADR, ADN, IMDG, IATA***	
· ***Class***	not regulated
· ***14.4 Packing group***	
· ***ADR, IMDG, IATA***	not regulated
· ***14.5 Environmental hazards:***	Not applicable.
· ***14.6 Special precautions for user***	Not applicable.
· ***14.7 Transport in bulk according to Annex II of Marpol and the IBC Code***	Not applicable.
· ***UN "Model Regulation":***	not regulated

SECTION 15: Regulatory information

· ***15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture***

· ***Directive 2012/18/EU***
· ***Named dangerous substances - ANNEX I*** None of the ingredients is listed.

· ***DIRECTIVE 2011/65/EU on the restriction of the use of certain hazardous substances in electrical and electronic equipment – Annex II***

None of the ingredients is listed.

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· ***REGULATION (EU) 2019/1148***

· ***Annex I - RESTRICTED EXPLOSIVES PRECURSORS (Upper limit value for the purpose of licensing under Article 5(3))***

None of the ingredients is listed.

· ***Annex II - REPORTABLE EXPLOSIVES PRECURSORS***

None of the ingredients is listed.

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

SECTION 16: Other information

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

· ***Department issuing SDS:***
Zymo Research Corp.
Safety Department
17062 Murphy Ave.
Irvine, CA 92614
USA
1-949-679-1190 or 1-888-882-9682

· ***Contact:*** sds@zymoresearch.com

· ***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
IATA: International Air Transport Association
GHS: Globally Harmonised System of Classification and Labelling of Chemicals
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)
VOC: Volatile Organic Compounds (USA, EU)
PBT: Persistent, Bioaccumulative and Toxic
vPvB: very Persistent and very Bioaccumulative