



Safety Data Sheet
acc. to OSHA HCS

Printing date 01/21/2016

Reviewed on 11/10/2015

1 Identification

- **Product identifier**
- **Trade name:** M-Dilution Buffer
- **Article number:** D5001-2, D5002-2, D5005-2, D5006-2
- **Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:**
Zymo Research Corp.
17062 Murphy Ave.
Irvine, CA 92614
USA
Phone: 1-949-679-1190 or 1-888-882-9682
sds@zymoresearch.com
- **Information department:** Product safety department
- **Emergency telephone number:** During normal business hours: +1 (949) 679 1190

2 Hazard(s) identification

- **Classification of the substance or mixture**



GHS05 Corrosion

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

- **Label elements**
- **GHS label elements** The product is classified and labeled according to the Globally Harmonized System (GHS).
- **Hazard pictograms**



GHS05

- **Signal word** Danger
- **Hazard-determining components of labeling:**
sodium hydroxide
- **Hazard statements**
Causes severe skin burns and eye damage.
- **Precautionary statements**
Do not breathe dusts or mists.
Wear eye protection / face protection.
Wash thoroughly after handling.
IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.
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).

(Contd. on page 2)



Safety Data Sheet acc. to OSHA HCS

Printing date 01/21/2016

Reviewed on 11/10/2015

Trade name: M-Dilution Buffer

(Contd. of page 1)

IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Wash contaminated clothing before reuse. If swallowed: Rinse mouth. Do NOT induce vomiting. Store locked up. Dispose of contents/container in accordance with local/regional/national/international regulations.

Classification system:

NFPA ratings (scale 0 - 4)



Health = 3 Fire = 0 Reactivity = 0

HMIS-ratings (scale 0 - 4)



Health = 3 Fire = 0 Reactivity = 0

Other hazards

Results of PBT and vPvB assessment

PBT: Not applicable.

vPvB: Not applicable.

3 Composition/information on ingredients

Chemical characterization: Mixtures

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

Dangerous components:

Table with 2 columns: CAS: 1310-73-2, sodium hydroxide, and ≤5%

4 First-aid measures

Description of first aid measures

- General information: Immediately remove any clothing soiled by the product. 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. Then consult a doctor. After swallowing: Drink copious amounts of water and provide fresh air. Immediately call a doctor. 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.

US

(Contd. on page 3)



Safety Data Sheet
acc. to OSHA HCS

Printing date 01/21/2016

Reviewed on 11/10/2015

Trade name: M-Dilution 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.
- **Special hazards arising from the substance or mixture** No further relevant information available.
- **Advice for firefighters**
- **Protective equipment:** No special measures required.

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).
Use neutralizing agent.
Dispose contaminated material as waste according to item 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.

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)** No further relevant information available.

8 Exposure controls/personal protection

- **Additional information about design of technical systems:** No further data; see item 7.

(Contd. on page 4)



Safety Data Sheet
acc. to OSHA HCS

Printing date 01/21/2016

Reviewed on 11/10/2015

Trade name: M-Dilution Buffer

(Contd. of page 3)

· **Control parameters**

· **Components with limit values that require monitoring at the workplace:**

CAS: 1310-73-2 sodium hydroxide

PEL	Long-term value: 2 mg/m ³
REL	Ceiling limit value: 2 mg/m ³
TLV	Ceiling limit value: 2 mg/m ³

· **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

· **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

US

(Contd. on page 5)



Safety Data Sheet
acc. to OSHA HCS

Printing date 01/21/2016

Reviewed on 11/10/2015

Trade name: M-Dilution Buffer

(Contd. of page 4)

9 Physical and chemical properties

· Information on basic physical and chemical properties

· General Information

· Appearance:

Form:	Liquid
Color:	Clear
Odor:	Odorless
Odour 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.

· Ignition temperature:

Decomposition temperature: Not determined.

· Auto igniting: Product is not selfigniting.

· Danger of explosion: Product does not present an explosion hazard.

· Explosion limits:

Lower:	Not determined.
Upper:	Not determined.

· Vapor 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:

Organic solvents: 0.0 %

Solids content: 4.5 %

· Other information: No further relevant information available.

US

(Contd. on page 6)



Safety Data Sheet
acc. to OSHA HCS

Printing date 01/21/2016

Reviewed on 11/10/2015

Trade name: M-Dilution Buffer

(Contd. of page 5)

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: 1310-73-2 sodium hydroxide

Oral LD50 2000 mg/kg (rat)

- Primary irritant effect:
on the skin: Caustic effect on skin and mucous membranes.
on the eye: Strong caustic effect.
Sensitization: No sensitizing effects known.
Additional toxicological information:
The product shows the following dangers according to internally approved calculation methods for preparations:
Corrosive
Swallowing will lead to a strong caustic effect on mouth and throat and to the danger of perforation of esophagus and stomach.

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.

(Contd. on page 7)



Safety Data Sheet acc. to OSHA HCS

Printing date 01/21/2016

Reviewed on 11/10/2015

Trade name: M-Dilution Buffer

(Contd. of page 6)

- Additional ecological information:
General notes: Water hazard class 1 (Self-assessment): slightly hazardous for water
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: Must not be disposed of together with household garbage.
Uncleaned packagings: Recommendation: Disposal must be made according to official regulations.
Recommended cleansing agent: Water, if necessary with cleansing agents.

14 Transport information

- UN-Number: UN1824
DOT, IMDG, IATA: UN1824
UN proper shipping name: Sodium hydroxide solution
DOT, IMDG, IATA: SODIUM HYDROXIDE SOLUTION

Transport hazard class(es)

DOT



- Class: 8 Corrosive substances
Label: 8

IMDG, IATA



- Class: 8 Corrosive substances
Label: 8

(Contd. on page 8)



Safety Data Sheet acc. to OSHA HCS

Printing date 01/21/2016

Reviewed on 11/10/2015

Trade name: M-Dilution Buffer

(Contd. of page 7)

Table with 2 columns: Hazard/Property and Value. Rows include Packing group (II), Environmental hazards (Not applicable), Special precautions for user (Warning: Corrosive substances), DOT, IMDG, IATA (II), EMS Number (F-A,S-B), Segregation groups (Alkalis), Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code (Not applicable), Transport/Additional information (DOT, Quantity limitations), IMDG (1L, Code: E2, Maximum net quantity per inner packaging: 30 ml, Maximum net quantity per outer packaging: 500 ml), and UN Model Regulation (UN 1824 SODIUM HYDROXIDE SOLUTION, 8, II).

15 Regulatory information

Safety, health and environmental regulations/legislation specific for the substance or mixture Sara

Table with 2 columns: Regulation and Status. Rows include Section 355 (extremely hazardous substances), Section 313 (Specific toxic chemical listings), TSCA (Toxic Substances Control Act), Proposition 65, Chemicals known to cause cancer, Chemicals known to cause reproductive toxicity for females, and Chemicals known to cause reproductive toxicity for males.

(Contd. on page 9)



Safety Data Sheet
acc. to OSHA HCS

Printing date 01/21/2016

Reviewed on 11/10/2015

Trade name: M-Dilution Buffer

(Contd. of page 8)

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 established by ACGIH)

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

Signal word Danger

Hazard-determining components of labeling:

sodium hydroxide

Hazard statements

Causes severe skin burns and eye damage.

Precautionary statements

Do not breathe dusts or mists.

Wear eye protection / face protection.

Wash thoroughly after handling.

IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.

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).

IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.

Wash contaminated clothing before reuse.

If swallowed: Rinse mouth. Do NOT induce vomiting.

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

(Contd. on page 10)



ZYMO RESEARCH

The Beauty of Science is to Make Things Simple

Page 10/10

Safety Data Sheet
acc. to OSHA HCS

Printing date 01/21/2016

Reviewed on 11/10/2015

Trade name: M-Dilution Buffer

(Contd. of page 9)

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** 01/21/2016 / -

· **Abbreviations and acronyms:**

ADR: Accord européen sur le transport 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

ACGIH: American Conference of Governmental Industrial Hygienists

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)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

PBT: Persistent, Bioaccumulative and Toxic

vPvB: very Persistent and very Bioaccumulative

Skin Corr. 1B: Skin corrosion/irritation, Hazard Category 1B

Eye Dam. 1: Serious eye damage/eye irritation, Hazard Category 1

US