



**Safety Data Sheet**  
*acc. to OSHA HCS*

Printing date 02/06/2018

Reviewed on 12/28/2015

## 1 Identification

- **Product identifier**
- **Trade name:** Sequencing Wash Buffer
- **Article number:** D4050-2-20, D4050-2-70, D4050-2-500
- **Application of the substance / the mixture** Laboratory Reagent
- **Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:**  
Zymo Research Corp.  
17062 Murphy Ave.  
Irvine, CA 92614  
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 (8 am to 5 pm Pacific Standard Time): +1 (949) 679 1190

## 2 Hazard(s) identification

- **Classification of the substance or mixture**



GHS02 Flame

Flam. Liq. 2 H225 Highly flammable liquid and vapor.

- **Label elements**
- **GHS label elements** The product is classified and labeled according to the Globally Harmonized System (GHS).
- **Hazard pictograms** GHS02
- **Signal word** Danger
- **Hazard statements**  
Highly flammable liquid and vapor.
- **Precautionary statements**  
Keep away from heat/sparks/open flames/hot surfaces. - No smoking.  
Keep container tightly closed.  
Ground/bond container and receiving equipment.  
Use explosion-proof electrical/ventilating/lighting/equipment.  
Use only non-sparking tools.  
Take precautionary measures against static discharge.  
Wear protective gloves/protective clothing/eye protection/face protection.  
If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.  
In case of fire: Use for extinction: CO2, powder or water spray.  
Store in a well-ventilated place. Keep cool.  
Dispose of contents/container in accordance with local/regional/national/international regulations.

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- Classification system:
NFFPA ratings (scale 0 - 4)



- HMIS-ratings (scale 0 - 4)



- 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: 64-17-5 ethanol, 100%

4 First-aid measures

- Description of first aid measures
After inhalation: Supply fresh air; consult doctor in case of complaints.
After skin contact: Generally the product does not irritate the skin.
After eye contact: Rinse opened eye for several minutes under running water. Then consult a doctor.
After swallowing: Do not induce vomiting; immediately call for medical help.
Information for doctor:
Most important symptoms and effects, both acute and delayed No further relevant information available.
Indication of any immediate medical attention and special treatment needed
No further relevant information available.

5 Fire-fighting measures

- Extinguishing media
Suitable extinguishing agents:
CO2, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.

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- Advice for firefighters
Protective equipment: Wear protective clothing.

6 Accidental release measures

- Personal precautions, protective equipment and emergency procedures
Environmental precautions:
Methods and material for containment and cleaning up:
Reference to other sections
Protective Action Criteria for Chemicals

Table with 3 rows: PAC-1, PAC-2, PAC-3. Columns include CAS number, chemical name (ethanol), and concentration (1,800 ppm, 3300\* ppm, 15000\* ppm).

7 Handling and storage

- Handling:
Precautions for safe handling
Information about protection against explosions and fires:
Conditions for safe storage, including any incompatibilities
Storage:
Requirements to be met by storerooms and receptacles:
Information about storage in one common storage facility:
Further information about storage conditions:

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Specific end use(s) Laboratory reagent

8 Exposure controls/personal protection

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

Control parameters

Components with limit values that require monitoring at the workplace:

CAS: 64-17-5 ethanol

PEL Long-term value: 1900 mg/m³, 1000 ppm

REL Long-term value: 1900 mg/m³, 1000 ppm

TLV Short-term value: 1880 mg/m³, 1000 ppm

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

Exposure controls

Personal protective equipment:

General protective and hygienic measures: Wash hands before breaks and at the end of work.

Breathing equipment: Not required.

Protection of hands:

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

Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture.

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

Material of gloves

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.

Penetration time of glove material

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

Eye protection:



Tightly sealed goggles

9 Physical and chemical properties

Information on basic physical and chemical properties

General Information

Appearance:

Form: Liquid

Color: Clear

Odor: Alcohol-like

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|   |  |
|---|--|
| · <b>Odor threshold:</b>  | Not determined.  |
| · <b>pH-value:</b>  | Not determined.  |
| · <b>Change in condition</b><br><b>Melting point/Melting range:</b> | Undetermined.  |
| <b>Boiling point/Boiling range:</b>                                 | 78 °C (172.4 °F)   |
| · <b>Flash point:</b>   | 13 °C (55.4 °F)  |
| · <b>Flammability (solid, gaseous):</b>                             | Not applicable.  |
| · <b>Ignition temperature:</b>                                      | 425 °C (797 °F)  |
| · <b>Decomposition temperature:</b>                                 | Not determined.  |
| · <b>Auto igniting:</b>   | Product is not selfigniting.   |
| · <b>Danger of explosion:</b>                                       | Product is not explosive. However, formation of explosive air/vapor mixtures are possible. |
| · <b>Explosion limits:</b>  |  |
| <b>Lower:</b>   | 3.5 Vol %  |
| <b>Upper:</b>   | 15 Vol %   |
| · <b>Vapor pressure at 20 °C (68 °F):</b>                           | 59 hPa (44.3 mm Hg)  |
| · <b>Density:</b>   | Not determined.  |
| · <b>Relative density</b>   | Not determined.  |
| · <b>Vapor density</b>  | Not determined.  |
| · <b>Evaporation rate</b>   | Not determined.  |
| · <b>Solubility in / Miscibility with</b><br><b>Water:</b>          | Fully miscible.  |
| · <b>Partition coefficient (n-octanol/water):</b>                   | Not determined.  |
| · <b>Viscosity:</b>   |  |
| <b>Dynamic:</b>   | Not determined.  |
| <b>Kinematic:</b>   | Not determined.  |
| · <b>Solvent content:</b>   |  |
| <b>Organic solvents:</b>  | 75.0 %   |
| <b>VOC content:</b>   | 75.00 %  |
|   | 750.0 g/l / 6.26 lb/gl   |
| <b>Solids content:</b>  | 0.0 %  |
| · <b>Other information</b>  | No further relevant information available.   |

**10 Stability and reactivity**

- **Reactivity** No further relevant information available.
- **Chemical stability**
- **Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.

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- Possibility of hazardous reactions No dangerous reactions known.
· Conditions to avoid No further relevant information available.
· Incompatible materials: No further relevant information available.
· Hazardous decomposition products: No dangerous decomposition products known.

11 Toxicological information

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

· Carcinogenic categories

· IARC (International Agency for Research on Cancer)

None of the ingredients is listed.

· NTP (National Toxicology Program)

None of the ingredients is listed.

· OSHA-Ca (Occupational Safety & Health Administration)

None of the ingredients is listed.

12 Ecological information

- Toxicity
· Aquatic toxicity: No further relevant information available.
· Persistence and degradability No further relevant information available.
· Behavior in environmental systems:
· Bioaccumulative potential No further relevant information available.
· Mobility in soil No further relevant information available.
· Additional ecological information:
· General notes:
Water hazard class 1 (Self-assessment): slightly hazardous for water
Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.
· Results of PBT and vPvB assessment
· PBT: Not applicable.
· vPvB: Not applicable.
· Other adverse effects No further relevant information available.



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13 Disposal considerations

- Waste treatment methods
Recommendation: Dispose of contents in accordance with local/regional/national, and international recommendations.
Uncleaned packagings:
Recommendation: Dispose of container in accordance with local/regional/national and international recommendations.
Recommended cleansing agent: Water, if necessary with cleansing agents.

14 Transport information

Table with 2 columns: Hazard/Requirement and Value. Rows include UN-Number (UN1170), UN proper shipping name (Ethanol solutions), Transport hazard class(es) (3 Flammable liquids), Packing group (II), and Environmental hazards (Not applicable).

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Table with 2 columns: Hazard/Information and Value. Rows include Stowage Category (A), Transport in bulk (Not applicable), DOT (On passenger/cargo aircraft), IMDG (1L, Code: E2, max quantities), and UN Model Regulation (UN 1170 ETHANOL SOLUTIONS, 3, II).

15 Regulatory information

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

Table with 2 columns: Regulation/Requirement and Status. Rows include Section 355, Section 313, TSCA, Proposition 65, Chemicals known to cause cancer, reproductive toxicity for females/males, developmental toxicity, Carcinogenic categories, EPA, and TLV.

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· 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 GHS02
· Signal word Danger
· Hazard statements Highly flammable liquid and vapor.
· Precautionary statements Keep away from heat/sparks/open flames/hot surfaces. - No smoking. Keep container tightly closed. Ground/bond container and receiving equipment. Use explosion-proof electrical/ventilating/lighting/equipment. Use only non-sparking tools. Take precautionary measures against static discharge. Wear protective gloves/protective clothing/eye protection/face protection. If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower. In case of fire: Use for extinction: CO2, powder or water spray. Store in a well-ventilated place. Keep cool. Dispose of contents/container in accordance with local/regional/national/international regulations.
· Chemical safety assessment: A Chemical Safety Assessment has not been carried out.

16 Other information

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

· Department issuing SDS:

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

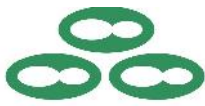
· Contact: sds@zymoresearch.com

· Date of preparation / last revision 02/06/2018 / -

· 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)
VOC: Volatile Organic Compounds (USA, EU)
PBT: Persistent, Bioaccumulative and Toxic
vPvB: very Persistent and very Bioaccumulative
NIOSH: National Institute for Occupational Safety

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**ZYMO RESEARCH**

*The Beauty of Science is to Make Things Simple*

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OSHA: Occupational Safety & Health  
TLV: Threshold Limit Value  
PEL: Permissible Exposure Limit  
REL: Recommended Exposure Limit  
Flam. Liq. 2: Flammable liquids – Category 2

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US