



## Safety Data Sheet acc. to OSHA HCS

Printing date 06/16/2016

Reviewed on 06/16/2016

### 1 Identification

- **Product identifier**
- **Trade name:** Genomic Binding Buffer
- **Article number:** D4068-3-25, D4068-3-45, D4068-3-85
- **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**



GHS02 Flame

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



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.

STOT SE 3 H336 May cause drowsiness or dizziness.

- **Label elements**

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

- **Hazard pictograms**



GHS02



GHS05



GHS07

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**Trade name: Genomic Binding Buffer**

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· **Signal word** Danger

· **Hazard-determining components of labeling:**

guanidinium thiocyanate  
propan-2-ol

· **Hazard statements**

Highly flammable liquid and vapor.  
Harmful if swallowed, in contact with skin or if inhaled.  
Causes severe skin burns and eye damage.  
May cause drowsiness or dizziness.

· **Precautionary statements**

Keep away from heat/sparks/open flames/hot surfaces. - No smoking.  
Use explosion-proof electrical/ventilating/lighting/equipment.  
Do not breathe dusts or mists.  
Wear protective gloves / eye protection / face protection.  
Wear protective gloves / protective clothing.  
Ground/bond container and receiving equipment.  
Use only non-sparking tools.  
Take precautionary measures against static discharge.  
Wash thoroughly after handling.  
Do not eat, drink or smoke when using this product.  
Use only outdoors or in a well-ventilated area.  
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 swallowed: Call a poison center/doctor if you feel unwell.  
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.  
In case of fire: Use for extinction: CO2, powder or water spray.  
Take off contaminated clothing and wash it before reuse.  
Store locked up.  
Store in a well-ventilated place. Keep container tightly closed.  
Store in a well-ventilated place. Keep cool.  
Dispose of contents/container in accordance with local/regional/national/international regulations.

· **Classification system:**

· **NFPA ratings (scale 0 - 4)**



· **HMIS-ratings (scale 0 - 4)**



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- **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:**

CAS: 593-84-0	guanidinium thiocyanate	≤70%
CAS: 67-63-0	propan-2-ol	≤30%

**4 First-aid measures**

- **Description of first aid measures**
- **General information:**  
Immediately remove any clothing soiled by the product.  
Symptoms of poisoning may even occur after several hours; therefore medical observation for at least 48 hours after the accident.
- **After inhalation:**  
Supply fresh air. If required, provide artificial respiration. Keep patient warm. Consult doctor if symptoms persist.  
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:** 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:**  
CO<sub>2</sub>, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
- **Advice for firefighters**
- **Protective equipment:** Mouth respiratory protective device.

**6 Accidental release measures**

- **Personal precautions, protective equipment and emergency procedures**  
Mount respiratory protective device.  
Wear protective equipment. Keep unprotected persons away.

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- 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: Keep ignition sources away - Do not smoke. Protect against electrostatic charges.
Conditions for safe storage, including any incompatibilities
Storage:
Requirements to be met by storerooms and receptacles: Store in a cool location.
Information about storage in one common storage facility: Do not store together with acids.
Further information about storage conditions: Keep receptacle tightly sealed. Store in cool, dry conditions in well sealed receptacles.
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.
Control parameters

Components with limit values that require monitoring at the workplace:

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

Table with 2 columns: Exposure Limit Type (PEL, REL, TLV, BEI) and Limit Value (e.g., Long-term value: 980 mg/m³, 400 ppm)

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**· Ingredients with biological limit values:**

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

BEI	40 mg/L
	Medium: urine
	Time: end of shift at end of workweek
	Parameter: Acetone (background, nonspecific)

**· 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



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**9 Physical and chemical properties**

**· Information on basic physical and chemical properties**

**· General Information**

**· Appearance:**

<b>Form:</b>	Liquid
<b>Color:</b>	Clear
<b>Odor:</b>	Alcohol-like
<b>Odour threshold:</b>	Not determined.

**· pH-value:** Not determined.

**· Change in condition**

<b>Melting point/Melting range:</b>	Undetermined.
<b>Boiling point/Boiling range:</b>	82 °C (180 °F)

**· Flash point:** 13 °C (55 °F)

**· Flammability (solid, gaseous):** Not applicable.

**· Ignition temperature:** 425 °C (797 °F)

**· Decomposition temperature:** Not determined.

**· Auto igniting:** Product is not selfigniting.

**· Danger of explosion:** Product is not explosive. However, formation of explosive air/vapor mixtures are possible.

**· Explosion limits:**

<b>Lower:</b>	2.0 Vol %
<b>Upper:</b>	12.0 Vol %

**· Vapor pressure at 20 °C (68 °F):** 43 hPa (32 mm Hg)

**· Density at 20 °C (68 °F):** 901.83551 g/cm<sup>3</sup> (525.817 lbs/gal)

**· 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:**

<b>Dynamic:</b>	Not determined.
<b>Kinematic:</b>	Not determined.

**· Solvent content:**

**Organic solvents:** 30.0 %

**VOC content:** 30.0 %

**Solids content:** 70.0 %

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Other information No further relevant information available.

10 Stability and reactivity

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

11 Toxicological information

- Information on toxicological effects
Acute toxicity:

LD/LC50 values that are relevant for classification:

CAS: 593-84-0 guanidinium thiocyanate

Oral LD50 593 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:
Harmful
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)

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

3

NTP (National Toxicology Program)

None of the ingredients is listed.

OSHA-Ca (Occupational Safety & Health Administration)

None of the ingredients is listed.



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12 Ecological information

Toxicity

Aquatic toxicity:

CAS: 593-84-0 guanidinium thiocyanate

EC50 42.4 mg/kg (daphnia)

Persistence and degradability No further relevant information available.

Behavior in environmental systems:

Bioaccumulative potential No further relevant information available.

Mobility in soil No further relevant information available.

Additional ecological information:

General notes:

Water hazard class 2 (Self-assessment): hazardous for water

Do not allow product to reach ground water, water course or sewage system.

Must not reach bodies of water or drainage ditch undiluted or unneutralized.

Danger to drinking water if even small quantities leak into the ground.

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. Do not allow product to reach sewage system.

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

DOT, IMDG, IATA

UN2924

UN proper shipping name

DOT

Flammable liquids, corrosive, n.o.s. (Isopropanol, guanidinium thiocyanate)

IMDG, IATA

FLAMMABLE LIQUID, CORROSIVE, N.O.S. (ISOPROPANOL (ISOPROPYL ALCOHOL), guanidinium thiocyanate)

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· Transport hazard class(es)

· DOT



· Class 3 Flammable liquids
· Label 3, 8

· IMDG



· Class 3 Flammable liquids
· Label 3/8

· IATA



· Class 3 Flammable liquids
· Label 3 (8)

· Packing group
· DOT, IMDG, IATA II

· Environmental hazards: Not applicable.

· Special precautions for user Warning: Flammable liquids
· Danger code (Kemler): 338
· EMS Number: F-E,S-C

· Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code Not applicable.

· Transport/Additional information:

· DOT
· Quantity limitations On passenger aircraft/rail: 1 L
On cargo aircraft only: 5 L

· IMDG
· Limited quantities (LQ) 1L
· Excepted quantities (EQ) Code: E2
Maximum net quantity per inner packaging: 30 ml
Maximum net quantity per outer packaging: 500 ml

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UN "Model Regulation": UN 2924 FLAMMABLE LIQUIDS, CORROSIVE, N.O.S. (ISOPROPANOL, GUANIDINIUM THIOCYANATE), 3 (8), II

15 Regulatory information

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

Section 355 (extremely hazardous substances):

None of the ingredients is listed.

Section 313 (Specific toxic chemical listings):

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

TSCA (Toxic Substances Control Act):

All ingredients are listed.

Proposition 65

Chemicals known to cause cancer:

None of the ingredients is listed.

Chemicals known to cause reproductive toxicity for females:

None of the ingredients is listed.

Chemicals known to cause reproductive toxicity for males:

None of the ingredients is listed.

Chemicals known to cause developmental toxicity:

None of the ingredients is listed.

Carcinogenic categories

EPA (Environmental Protection Agency)

None of the ingredients is listed.

TLV (Threshold Limit Value established by ACGIH)

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

A4

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 GHS05 GHS07

Signal word Danger

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· **Hazard-determining components of labeling:**

guanidinium thiocyanate  
propan-2-ol

· **Hazard statements**

Highly flammable liquid and vapor.  
Harmful if swallowed, in contact with skin or if inhaled.  
Causes severe skin burns and eye damage.  
May cause drowsiness or dizziness.

· **Precautionary statements**

Keep away from heat/sparks/open flames/hot surfaces. - No smoking.  
Use explosion-proof electrical/ventilating/lighting/equipment.  
Do not breathe dusts or mists.  
Wear protective gloves / eye protection / face protection.  
Wear protective gloves / protective clothing.  
Ground/bond container and receiving equipment.  
Use only non-sparking tools.  
Take precautionary measures against static discharge.  
Wash thoroughly after handling.  
Do not eat, drink or smoke when using this product.  
Use only outdoors or in a well-ventilated area.  
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 swallowed: Call a poison center/doctor if you feel unwell.  
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.  
In case of fire: Use for extinction: CO2, powder or water spray.  
Take off contaminated clothing and wash it before reuse.  
Store locked up.  
Store in a well-ventilated place. Keep container tightly closed.  
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:**

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**ZYMO RESEARCH**

*The Beauty of Science is to Make Things Simple*

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USA

Phone: 1-949-679-1190 or 1-888-882-9682

· **Contact:** sds@zymoresearch.com

· **Date of preparation / last revision** 06/16/2016 / -

· **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)

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, Hazard Category 2

Acute Tox. 4: Acute toxicity, Hazard Category 4

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

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

STOT SE 3: Specific target organ toxicity - Single exposure, Hazard Category 3

US