

# Safety Data Sheet

acc. to OSHA HCS

Printing date 02/03/2015

Reviewed on 01/19/2015

## 1 Identification

- **Product identifier**
- **Trade name:** Reagent B - Clarifying Solution
- **Catalog or product number:** 1641
- **Relevant identified uses of the substance or mixture and uses advised against**  
No further relevant information available.
- **Application of the substance / the mixture** Laboratory chemicals
- **Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:**  
Bio-Rad Laboratories, Life Science Group  
2000 Alfred Nobel Drive  
Hercules, California 94547 (510)741-1000
- **Information department:**  
Technical services, customer support  
lsg\_techserv\_us@bio-rad.com
- **Emergency telephone number:**  
1(800)424-9300 Use only in the event of a CHEMICAL EMERGENCY involving a SPILL, LEAK, FIRE, EXPLOSION or ACCIDENT.  
510-741-1000

## 2 Hazard(s) identification

- **Classification of the substance or mixture**  
Flam. Liq. 3 H226 Flammable liquid and vapour.  
Eye Dam. 1 H318 Causes serious eye damage.  
Acute Tox. 4 H302 Harmful if swallowed.  
Skin Irrit. 2 H315 Causes skin irritation.  
STOT SE 3 H335-H336 May cause respiratory irritation. May cause drowsiness or dizziness.
- **Classification according to Directive 67/548/EEC or Directive 1999/45/EC**  
Irritant to skin.  
Flammable.  
May cause irreversible eye damage.  
Irritant to respiratory system.  
Irritant to respiratory system and skin.  
Xn; Harmful  
R22: Harmful if swallowed.  
Xi; Irritant  
R37/38-41: Irritating to respiratory system and skin. Risk of serious damage to eyes.  
R10: Flammable.
- **Information concerning particular hazards for human and environment:**  
The product has to be labelled due to the calculation procedure of the "General Classification guideline for preparations of the EU" in the latest valid version.
- **Classification system:**  
The classification was made according to the latest editions of the EU-lists, and expanded upon from company and literature data.  
The classification was made according to OSHA 29CFR 1910.1200 and 1910.1030, and is expanded upon from company and/or literature information.

(Contd. on page 2)

## Safety Data Sheet

acc. to OSHA HCS

Printing date 02/03/2015

Reviewed on 01/19/2015

Trade name: Reagent B - Clarifying Solution

(Contd. of page 1)

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



GHS02 GHS05 GHS07

- **Signal word** Danger
- **Hazard-determining components of labeling:**  
butan-1-ol
- **Hazard statements**
  - H226 Flammable liquid and vapour.
  - H302 Harmful if swallowed.
  - H315 Causes skin irritation.
  - H318 Causes serious eye damage.
  - H335-H336 May cause respiratory irritation. May cause drowsiness or dizziness.
- **Precautionary statements**
  - P210 Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
  - P303+P361+P353 IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/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.
  - P405 Store locked up.
  - P501 Dispose of contents/container in accordance with local/regional/national/international regulations.
- **Additional information:** Contact with acids may cause release of toxic gases
- **Emergency overview:**
- **Routes of exposure:**
  - Ingestion
  - Inhalation
  - Skin
- **Other hazards**
- **Results of PBT and vPvB assessment**
  - **PBT:** Not applicable.
  - **vPvB:** Not applicable.

### 3 Composition/information on ingredients

- **Chemical characterization: Substances**
- **CAS No. Description:**  
71-36-3 butan-1-ol
- **Identification number(s):**
- **EC number:** 200-751-6
- **Index number:** 603-004-00-6
- **Chemical characterization: Mixtures**
- **Description:** Mixture of the substances listed below with non-hazardous additions.

(Contd. on page 3)

USA

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

Printing date 02/03/2015

Reviewed on 01/19/2015

**Trade name: Reagent B - Clarifying Solution**

(Contd. of page 2)

**· Listing of dangerous and non-hazardous components:**

71-36-3	butan-1-ol	Xn R22 Xi R37/38-41 R10-67	50-100%
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**· Additional information** For the wording of the listed risk phrases refer to section 15.

**4 First-aid measures**

**· Description of first aid measures**

**· General information**

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

**· After inhalation** 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** Immediately call a doctor.

**· Most important symptoms and effects, both acute and delayed** Breathing difficulty

**· 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, sand, extinguishing powder. Do not use water.

**· For safety reasons unsuitable extinguishing agents**

Water.

Water with full jet.

**· Special hazards arising from the substance or mixture** No further relevant information available.

**· Advice for firefighters**

**· Protective equipment:** Wear self-contained respiratory protective device.

**6 Accidental release measures**

**· Personal precautions, protective equipment and emergency procedures**

Wear protective equipment (See section 8). Keep unprotected persons away.

Wear protective clothing.

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

**· Methods and material for containment and cleaning up:**

Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).

Dispose contaminated material as waste according to item 13.

Ensure adequate ventilation.

Do not flush with water or aqueous cleansing agents

**· 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.

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

Printing date 02/03/2015

Reviewed on 01/19/2015

**Trade name: Reagent B - Clarifying Solution**

(Contd. of page 3)

**7 Handling and storage**

- **Precautions for safe handling** No special precautions are necessary if used correctly.
- **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:** According to product specification
- **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.

· **Control parameters**

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

**71-36-3 butan-1-ol**

PEL	300 mg/m <sup>3</sup> , 100 ppm
REL	Short-term value: C 150 mg/m <sup>3</sup> , C 50 ppm Skin
TLV	61 mg/m <sup>3</sup> , 20 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**  
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 skin.  
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.
- **Material of gloves** Synthetic gloves
- **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:**  
Safety glasses  
Tightly sealed goggles.

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

Printing date 02/03/2015

Reviewed on 01/19/2015

Trade name: Reagent B - Clarifying Solution

(Contd. of page 4)

**9 Physical and chemical properties**

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

· **General Information**

· **Appearance:**

Form: Liquid  
Color: Colorless  
Odor: Alcohol-like  
Odour threshold: Not determined.

· **pH-value:** Not determined.

· **Change in condition**

Melting point/Melting range: -89 °C  
Boiling point/Boiling range: 116 °C

· **Flash point:** 21 - 55 °C

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

· **Ignition temperature:** 340 °C

· **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:**

Lower: 1.5 Vol %  
Upper: 9.4 Vol %

· **Vapor pressure at 20 °C:** 6.7 hPa

· **Density at 20 °C:** 0.81003 g/cm<sup>3</sup>  
· **Relative density** Not determined.  
· **Vapour density** Not determined.  
· **Evaporation rate** Not determined.

· **Solubility in / Miscibility with**

Water at 20 °C: 77 g/l  
Fully miscible

· **Partition coefficient (n-octanol/water):** Not determined.

· **Viscosity:**

dynamic: Not determined.  
kinematic: Not determined.

· **Solvent content:**

Organic solvents: 100.0 %

· **Other information** No further relevant information available.

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

Printing date 02/03/2015

Reviewed on 01/19/2015

Trade name: Reagent B - Clarifying Solution

(Contd. of page 5)

**10 Stability and reactivity**

- **Reactivity**
- **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 for hazardous components per OSHA criteria:**

**71-36-3 butan-1-ol**

Oral	LD50	790 mg/kg (rat)
Dermal	LD50	3400 mg/kg (rbt)
Inhalative	LC50/4 h	8000 mg/l (rat)

- **Primary irritant effect:**
- **on the skin:** Irritant to skin and mucous membranes.
- **on the eye:**  
Strong caustic effect.  
Strong irritant with the danger of severe eye injury.  
Irritant effect.
- **Sensitization:** No sensitizing effects known.
- **Additional toxicological information:**  
The product shows the following dangers according to the calculation method of the General EU Classification Guidelines for Preparations as issued in the latest version:  
Harmful  
Irritant

· **Carcinogenic categories**

· **IARC (International Agency for Research on Cancer)**

None of the ingredients is listed.

· **NTP (National Toxicology Program)**

None of the ingredients is listed.

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

None of the ingredients is listed.

· **Target organs:**

Skin.  
Eye.

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

Printing date 02/03/2015

Reviewed on 01/19/2015

Trade name: Reagent B - Clarifying Solution

(Contd. of page 6)

**12 Ecological information**

- **Toxicity**
- **Aquatic toxicity:** No further relevant information available.
- **Persistence and degradability** No further relevant information available.
- **Bioaccumulative potential** No further relevant information available.
- **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.
- **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**  
Hand over to hazardous waste disposers.  
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.

**14 Transport information**

· <b>UN-Number</b>	
· <b>DOT, ADR, IMDG, IATA</b>	UN1120
· <b>UN proper shipping name</b>	
· <b>DOT, IMDG, IATA</b>	BUTANOLS, mixture
· <b>ADR</b>	1120 BUTANOLS, mixture
· <b>Transport hazard class(es)</b>	
· <b>DOT, ADR, IMDG, IATA</b>	
· <b>Class</b>	3 Flammable liquids
· <b>Label</b>	3
· <b>Packing group</b>	
· <b>DOT, ADR, IMDG, IATA</b>	III
· <b>Environmental hazards:</b>	
· <b>Marine pollutant:</b>	No
· <b>Special precautions for user</b>	Warning: Flammable liquids
· <b>Danger code (Kemler):</b>	30
· <b>EMS Number:</b>	F-E,S-D

(Contd. on page 8)

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

Printing date 02/03/2015

Reviewed on 01/19/2015

**Trade name: Reagent B - Clarifying Solution**

(Contd. of page 7)

- **Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code** Not applicable.
- **UN "Model Regulation":** UN1120; BUTANOLS, mixture; 3; III

**15 Regulatory information**

- **Safety, health and environmental regulations/legislation specific for the substance or mixture**
- **SARA (Superfund Amendments and Reauthorization Act of 1986 - USA)**

· **Section 302/304 (40CFR355.30 / 40CFR355.40):**

None of the ingredients is listed.

· **Section 313 (40CFR372.65):**

71-36-3 butan-1-ol

· **TSCA (Toxic Substances Control Act):**

All ingredients are listed.

· **Carcinogenic categories**

· **EPA (Environmental Protection Agency)**

71-36-3 butan-1-ol

D

· **TLV (Threshold Limit Value established by ACGIH)**

None of the ingredients is listed.

· **MAK (German Maximum Workplace Concentration)**

None of the ingredients is listed.

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

None of the ingredients is listed.

· **National regulations**

· **Technical instructions (air):**

Class	Share in %
NK	50-100

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

· **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:** Environmental Health and Safety.

· **Contact:**

Life Science Group, Environmental Health and Safety, 2000 Alfred Nobel Drive, Hercules, California, 94547: 1(510) 741-1000

Diagnostic Group, Environmental Health and Safety, 4000 Alfred Nobel Drive, Hercules, California, 94547: 1(510) 724-7000

· **Date of preparation / last revision** 02/03/2015 / -

(Contd. on page 9)



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

Printing date 02/03/2015

Reviewed on 01/19/2015

**Trade name: Reagent B - Clarifying Solution**

(Contd. of page 8)

**· 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)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

Flam. Liq. 3: Flammable liquids, Hazard Category 3

Acute Tox. 4: Acute toxicity, Hazard Category 4

Skin Irrit. 2: Skin corrosion/irritation, Hazard Category 2

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

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

· \* **Data compared to the previous version altered.**