

1 Identification of substance:

- **Product name:** *BD FACS Permeabilizing Solution 2 (10x)*
- **Catalog number:** *340973-MSDS.B*
- **Manufacturer/Supplier:**
BD Biosciences
2350 Qume Drive
San Jose, CA 95131
Tel.: (877)232-8995
- **Information department:** *Technical Services*
- **Emergency information:**
In case of a chemical emergency, spill, fire, or exposure, call BD Biosciences at (877)232-8995, or ChemTrec at (800)424-9300.

2 Composition/Data on components:

- **Chemical characterization**
- **Description:** *Mixture of the substances listed below with nonhazardous additions.*

- **Dangerous components:**

111-46-6	diethylene glycol	Xn; R 22	25-50%
50-00-0	formaldehyde	Carc. Cat. 3; T, C; R 23/24/25-34-40-43	2.5-10%
9041-08-1	Heparin Sodium	Xn; R 20/22	< 2.5%

3 Hazards identification

- **Hazard description:**



Xn Harmful

- **Information pertaining to particular dangers for man and environment**

- R 20/21/22 Harmful by inhalation, in contact with skin and if swallowed.*
- R 36/37/38 Irritating to eyes, respiratory system and skin.*
- R 40 Limited evidence of a carcinogenic effect.*
- R 43 May cause sensitization by skin contact.*

- **Classification system**

The classification was made according to the latest editions of international substances lists, and expanded upon from company and literature data.

- **NFPA ratings (scale 0-4)**



Health = 2
 Fire = 1
 Reactivity = 0

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4 First aid measures

· **General information**

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

· **After inhalation**

Supply fresh air and seek medical advice.

In case of unconsciousness place patient on side position for transportation.

· **After skin contact** Immediately wash with water and soap and rinse thoroughly.

· **After eye contact** Rinse opened eye for 15 minutes under running water. Then consult a doctor.

· **After swallowing**

Immediately call a doctor.

Seek immediate medical advice.

· **Information for doctor** Show the product label or this MSDS.

5 Fire fighting measures

· **Suitable extinguishing agents** Use fire fighting measures that suit the environment.

· **Protective equipment:** No special measures required.

6 Accidental release measures

· **Person-related safety precautions:** Not required.

· **Measures for environmental protection:** Wipe up with damp sponge or mop.

· **Measures for cleaning/collecting:**

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

Dispose contaminated material as waste according to item 13.

Ensure adequate ventilation.

· **Additional information:**

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**

· **Information 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.

· **Storage**

· **Requirements to be met by storerooms and receptacles:** No special requirements.

· **Information about storage in one common storage facility:** Store away from oxidizing agents.

· **Further information about storage conditions:** Store in cool, dry conditions in well sealed containers.

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8 Exposure controls and personal protection

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

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

111-46-6 diethylene glycol

WEEL 10 mg/m³

50-00-0 formaldehyde

PEL Short-term value: 2 ppm

Long-term value: 0.75 ppm

see 29 CFR 1910.1048

REL Short-term value: C 0.1* ppm

Long-term value: 0.016 ppm

*15-min

TLV Short-term value: C 0.37 mg/m³, C 0.3 ppm

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

· **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, use a chemical fume hood or a NIOSH/MSHA-approved respirator.

· **Protection of hands:**



Chemical resistant gloves (i.e. nitrile, or equivalent).

· **Eye protection:** Safety glasses

· **Body protection:** Protective work clothing (lab coat).

9 Physical and chemical properties:

· **General Information**

Form: Liquid
Color: According to product specification
Odor: Characteristic

· **Change in condition**

Melting point/Melting range: Not determined

Boiling point/Boiling range: -21°C (-6°F)

· **Flash point:** 146°C (295°F)

· **Ignition temperature:** 225.0°C (437°F)

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

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· Danger of explosion:	Product does not present an explosion hazard.
· Explosion limits:	
Lower:	0.7 Vol %
Upper:	73.0 Vol %
· Vapor pressure at 20°C (68°F):	23.0 hPa (17 mm Hg)
· Density:	Not determined
· Solubility in / Miscibility with Water:	Not miscible or difficult to mix
· pH-value:	Not applicable
· Solvent content:	
Organic solvents:	39.9 %
Water:	56.0 %
· Solids content:	4.1 %

10 Stability and reactivity

- **Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.
- **Materials to be avoided:** Incompatible material: strong oxidizers.
- **Dangerous reactions** Reacts with oxidizing agents
- **Dangerous products of decomposition:**
 Poisonous gases/vapors
 Formaldehyde

11 Toxicological information

· **Acute toxicity:**

· **LD/LC50 values that are relevant for classification:**

111-46-6 diethylene glycol

Oral	LD50	12565 mg/kg (rat)
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Dermal	LD50	11890 mg/kg (rbt)
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50-00-0 formaldehyde

Oral	LD50	42 mg/kg (rat)
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· **Primary irritant effect:**

· **on the skin:** Irritant to skin and mucous membranes.

· **on the eye:** Irritating effect.

· **Sensitization:** No sensitizing effects known.

· **Subacute to chronic toxicity:** Target organs: respiratory system

· **Additional toxicological information:**

The product shows the following dangers according to internally approved calculation methods for preparations:

Harmful

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Irritant

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12 Ecological information:

- **Ecotoxicological effects:**
- **Other information:**
The ecological effects have not been thoroughly investigated, but currently none have been identified.
- **General notes:** *Water hazard class 2 (Self-assessment): hazardous for water.*

13 Disposal considerations

- **Product:**
- **Recommendation**
*Must not be disposed of with solid waste.
Dispose of material in accordance with federal (40 CFR 261), state and local requirements.
This product is not considered a RCRA hazardous waste.*
- **Uncleaned packagings:**
- **Recommendation:** *Disposal must be made according to state and federal regulations.*
- **Recommended cleansing agent:** *Water, if necessary with cleansing agents.*

14 Transport information

- **DOT regulations:**
- **Hazard class:** -
- **Land transport ADR/RID (cross-border)**
- **ADR/RID class:** -
- **Maritime transport IMDG:**
- **IMDG Class:** -
- **Marine pollutant:** *No*
- **Air transport ICAO-TI and IATA-DGR:**
- **ICAO/IATA Class:** -

· **Transport/Additional information:**
If a dashed line appears in the Hazard Class section for the type of transportation, this indicates the product is not regulated for transportation. However, if a Hazard Class Number is listed the product is regulated.

15 Regulations

- **SARA Section 355 (extremely hazardous substances)**
- 50-00-0 | formaldehyde
- **SARA Section 313 (specific toxic chemical listings)**
- 50-00-0 | formaldehyde
- 9041-08-1 | Heparin Sodium

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· TSCA (Toxic Substances Control Act)	
111-46-6	diethylene glycol
50-00-0	formaldehyde
68-04-2	Sodium citrate
9041-08-1	Heparin Sodium
9005-64-5	Polyoxethylenesorbitan Monolaurate (Tween-20)

 · **California Proposition 65 - Chemicals known to cause cancer**

Formaldehyde is toxic, allergenic, and is known to the state of California to cause cancer. Note: Formaldehyde poses a cancer threat through inhalation of the gas or vapor.

50-00-0	formaldehyde
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 · **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.

 · **Carcinogenicity categories**

· IARC (International Agency for Research on Cancer)		
50-00-0	formaldehyde	2A
· NTP (National Toxicology Program)		
50-00-0	formaldehyde	R
· TLV (Threshold Limit Value established by ACGIH)		
None of the ingredients is listed.		

 · **Product related hazard information:**

The product has been classified and marked in accordance with regulations on hazardous materials.

 · **Hazard symbols:**

Xn Harmful

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

formaldehyde
diethylene glycol

 · **Risk phrases:**

20/21/22 Harmful by inhalation, in contact with skin and if swallowed.
36/37/38 Irritating to eyes, respiratory system and skin.
40 Limited evidence of a carcinogenic effect.
43 May cause sensitization by skin contact.

 · **Safety phrases:**

3 Keep in a cool place.
9 Keep container in a well-ventilated place.
23 Do not breathe gas/fumes/vapour/spray.
26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
36/37/39 Wear suitable protective clothing, gloves and eye/face protection.
60 This material and its container must be disposed of as hazardous waste.

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Printing date 04/26/2007

Reviewed on 04/26/2007

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· **National regulations**· **Technical instructions (air):**

Class	Share in %
Water	56.0
I	10.0
NK	30.0

· **Water hazard class:** Water hazard class 2 (Self-assessment): hazardous for water.**16 Other information:**

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· **Department issuing MSDS:** Safety and Environment Department· **Contact:** Technical Service Representative

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