

Printing date 03/09/2015

Reviewed on 03/09/2015

1 Identification

- · Product identifier
- Product name: BD FACSTM Permeabilizing Solution 2
 Catalog number: 340973
- Relevant identified uses of the substance or mixture and uses advised against • Sector of Use SU24 Scientific research and development

· Details of the supplier of the safety data sheet

- Manufacturer/Supplier: Becton, Dickinson and Company BD Biosciences
 2350 Qume Drive San Jose, CA 95131 USA Tel 877.232.8995 bdbiosciences.com
 Information department: Technical Services
- · Emergency telephone number:

In case of a chemical emergency, spill, fire, or exposure, call BD Biosciences at (877)232-8995, or ChemTrec at (800)424-9300.

2 Hazard(s) identification

Skull and crossbones Acute Tox. 3 H311 Toxic in contact with skin. Acute Tox. 3 H331 Toxic if inhaled. Image: Control of Control of Control of Control of exposure: Inhalative. Natrona Control of exposure: Inhalative. Muta. 2 H341 Suspected of causing genetic defects. Carc. 1A H350 May cause cancer. Route of exposure: Inhalative. STOT SE 2 H371-H335 May cause damage to organs. May cause respiratory irritation. STOT RE 2 H373 May cause damage to the kidneys through prolonged or repeated exposure. Route of exposure: Oral. Image: Corrosion Eye Dam. 1 H318 Causes serious eye damage. Image: Corrosion Karte Tox. 4 H302 Harmful if swallowed. Skin Irrit. 2 H315 Causes skin irritation. Skin Irrit. 2 H317 May cause an allergic skin reaction.	· Classification of the substance or mixture							
Acute Tox. 3 H331 Toxic if inhaled. View Halth hazard Muta. 2 H341 Suspected of causing genetic defects. Carc. 1A H350 May cause cancer. Route of exposure: Inhalative. STOT SE 2 H371-H335 May cause damage to organs. May cause respiratory irritation. STOT RE 2 H373 May cause damage to the kidneys through prolonged or repeated exposure. Route of exposure: Oral. View Corrosion Espe Dam. 1 H318 Causes serious eye damage. View View Harmful if swallowed. Eauses skin irritation. Skin Irrit. 2 H315 Causes skin irritation. Skin Sens. 1 H317 May cause an allergic skin reaction.	Skull and crossbones							
Wuta. 2H341Suspected of causing genetic defects.Carc. 1AH350May cause cancer. Route of exposure: Inhalative.STOT SE 2H371-H335May cause damage to organs. May cause respiratory irritation.STOT RE 2H373May cause damage to the kidneys through prolonged or repeated exposure. Route of exposure: Oral.top://www.colspan="2">WorksonCourosionEye Dam. 1H318Causes serious eye damage.Acute Tox. 4H302Harmful if swallowed.Skin Irrit. 2H315Causes skin irritation.Skin Sens. 1H317May cause an allergic skin reaction.	Acute Tox. 3	H311	Toxic in contact with skin.					
Wuta. 2H341Suspected of causing genetic defects.Carc. 1AH350May cause cancer. Route of exposure: Inhalative.STOT SE 2H371-H335May cause damage to organs. May cause respiratory irritation.STOT RE 2H373May cause damage to the kidneys through prolonged or repeated exposure. Route of exposure: Oral.Eve Dam. 1H318Causes serious eye damage.Eve Tox. 4H302Harmful if swallowed.Skin Irrit. 2H315Causes skin irritation.Skin Sens. 1H317May cause an allergic skin reaction.	Acute Tox. 3	H331	Toxic if inhaled.					
Carc. 1AH350May cause cancer. Route of exposure: Inhalative.STOT SE 2H371-H335May cause damage to organs. May cause respiratory irritation.STOT RE 2H373May cause damage to the kidneys through prolonged or repeated exposure. Route of exposure: Oral. \widehat{vov} CorrosionEye Dam. 1H318Causes serious eye damage.Acute Tox. 4H302Acute Tox. 4H302Harmful if swallowed.Skin Irrit. 2H315Causes skin irritation.Skin Sens. 1H317May cause an allergic skin reaction.	Не	ealth hazard						
STOT SE 2H371-H335May cause damage to organs. May cause respiratory irritation.STOT RE 2H373May cause damage to the kidneys through prolonged or repeated exposure. Route of exposure: Oral. \overbrace{vor} CorrosionEye Dam. 1H318Causes serious eye damage. \overbrace{vor} Kaute Tox. 4H302Skin Irrit. 2H315Causes skin irritation.Skin Sens. 1H317May cause an allergic skin reaction.	Muta. 2	H341	Suspected of causing genetic defects.					
STOT RE 2H373May cause damage to the kidneys through prolonged or repeated exposure. Route of exposure: Oral.Image: Image: Image	Carc. 1A	H350	May cause cancer. Route of exposure: Inhalative.					
exposure: Oral. exposure: Oral. Eye Dam. 1 H318 Causes serious eye damage. Acute Tox. 4 H302 Harmful if swallowed. Skin Irrit. 2 H315 Causes skin irritation. Skin Sens. 1 H317 May cause an allergic skin reaction. (Contd. on page 2)	STOT SE 2	Н371-Н335	May cause damage to organs. May cause respiratory irritation.					
Eye Dam. 1H318Causes serious eye damage.Image: Constant of the system of the	STOT RE 2	H373						
Acute Tox. 4 H302Harmful if swallowed.Skin Irrit. 2 H315Causes skin irritation.Skin Sens. 1 H317May cause an allergic skin reaction.	Co	orrosion						
Skin Irrit. 2H315Causes skin irritation.Skin Sens. 1H317May cause an allergic skin reaction.(Contd. on page 2)	Eye Dam. 1	H318	Causes serious eye damage.					
Skin Irrit. 2H315Causes skin irritation.Skin Sens. 1H317May cause an allergic skin reaction.(Contd. on page 2)								
Skin Sens. 1 H317 May cause an allergic skin reaction. (Contd. on page 2)	Acute Tox. 4	H302	Harmful if swallowed.					
(Contd. on page 2)	Skin Irrit. 2	H315	Causes skin irritation.					
	Skin Sens. 1	H317						



Printing date 03/09/2015

Reviewed on 03/09/2015



Safety Data Sheet acc. to ISO/11014:2009

USA ·



Printing date 03/09/2015

Reviewed on 03/09/2015

Product name: BD FACSTM Permeabilizing Solution 2

(Contd. of page 2)

· vPvB: Not applicable.

3 Composition/information on ingredients

· Chemical characterization: Mixtures

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

111-46-6	diethylene glycol	30.0
111 40 0	\mathbf{X} Xn R22	50.0
	♦ STOT RE 2, H373; ♦ Acute Tox. 4, H302	
50-00-0	formaldehyde	9.99
	😡 T R23/24/25; 🗾 C R34; 🗙 Xn R40; 💥 Xi R43	
	Carc. Cat. 3	
(7.5()	H335; H401	2.51
0/-30-1	methanol	3.51
	😡 T R23/24/25-39/23/24/25; 🔥 F R11	

4 First-aid measures

· Description of 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.
- If skin irritation continues, consult a doctor.
- After eye contact Flush immediately with water for 15 minutes, and consult a doctor.
- After swallowing Drink copious amounts of water and provide fresh air. Immediately call a 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, ABC multipurpose dry chemical 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.

(Contd. on page 4)

USA



Printing date 03/09/2015

Reviewed on 03/09/2015

(Contd. of page 3)

Product name: BD FACSTM Permeabilizing Solution 2

· Advice for firefighters

· Protective equipment: No special measures required.

6 Accidental release measures

- *Personal precautions, protective equipment and emergency procedures The usual precautionary measures for handling chemicals should be followed. See Section 8 for information on personal protection equipment.*
- Environmental precautions: No special measures required.
- *Methods and material for containment and cleaning up:* Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders). 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

· 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: Store in a cool location.
- 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.
- 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:			
111-46-	111-46-6 diethylene glycol			
WEEL () Long-term value: 10 mg/m ³				
67-56-1 methanol				
PEL()	Long-term value: 260 mg/m ³ , 200 ppm			
REL()	Short-term value: 325 mg/m³, 250 ppm Long-term value: 260 mg/m³, 200 ppm Skin			
TLV()	Short-term value: 328 mg/m ³ , 250 ppm Long-term value: 262 mg/m ³ , 200 ppm Skin; BEI			
	(Contd. on page .			



Printing date 03/09/2015

Reviewed on 03/09/2015

Product name: BD FACSTM Permeabilizing Solution 2

(Contd. of page 4)

٠j	Ingredients	with	biological	limit values:

67-56-1 methanol

BEI () 15 mg/L Medium: urine Time: end of shift Parameter: Methanol (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: Use suitable respiratory protective device in case of insufficient ventilation.
- · Protection of hands:



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

· Eye protection:

Safety glasses

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

Information on basic physical and c		
• General Information • Appearance:		
· Form:	Liquid	
· Color:	Clear	
· Odor:	Characteristic	
· Odour threshold:	Not determined	
· pH-value:	Not determined	
· Change in condition		
• Melting point/Melting range:	Not determined	
· Boiling point/Boiling range:	Not determined	
· Flash point:	> 64 °C (> 147 °F)	
· Flammability (solid, gaseous)	Not applicable	
· Ignition temperature:	Not determined	
· Decomposition temperature:	Not determined	
· Auto igniting:	Product is not self igniting.	

USA



Printing date 03/09/2015

Reviewed on 03/09/2015

Product name: BD FACSTM Permeabilizing Solution 2

		(Contd. of page
· Danger of explosion:	Product does not present an explosion hazard.	
· Explosion limits:		
· Lower:	Not determined	
· Upper:	Not determined	
· Vapor pressure:	Not applicable	
· Density:	Not determined	
· Relative density	Not determined	
· Vapour density	Not determined	
· Evaporation rate	Not determined	
· Solubility in / Miscibility with	i	
· Water:	Soluble	
· Partition coefficient (n-octan	ol/water): Not determined	
· Viscosity:		
· dynamic:	Not determined	
· kinematic:	Not determined	
· Solvent content:		
· Organic solvents:	43.5 %	
· Water:	53.4 %	
Other information	No further relevant information available.	

10 Stability and reactivity

· Reactivity No dangerous reactions known

- · 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: Incompatible material: strong oxidizers.
- · 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:

111-46-6 diethylene glycol

Oral LD50 12565 mg/kg (rat)

Dermal LD50 11890 mg/kg (rbt)

50-00-0 formaldehyde

Oral LD50 460 mg/kg (rat)

Dermal LD50 270 mg/kg (Rabbit)

· Primary irritant effect:

• on the skin: Irritant to skin and mucous membranes.

• on the eye: Strong irritant with the danger of severe eye injury.

(Contd. on page 7)

USA



Printing date 03/09/2015

Reviewed on 03/09/2015

(Contd. of page 6)

1

R

Product name: BD FACSTM Permeabilizing Solution 2

- Sensitization: Sensitization possible through skin contact.
- · Additional toxicological information: Irritant
- · Carcinogenic categories

· IARC (International Agency for Research on Cancer)

50-00-0 formaldehyde

 \cdot NTP (National Toxicology Program)

50-00-0 formaldehyde

· OSHA-Ca (Occupational Safety & Health Administration)

50-00-0 formaldehyde

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.
- · Ecotoxical effects:
- Other information:
- The ecological effects have not been thoroughly investigated, but currently none have been identified.
- Additional ecological information:

· General notes: Water hazard class 2 (Self-assessment): 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 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.

UN-Number		
· DOT, ADR, ADN, IMDG, IATA	Void	
UN proper shipping name		
· DOT, ADR, ADN, IMDG, IATA	Void	



Printing date 03/09/2015

Reviewed on 03/09/2015

Product name: BD FACSTM Permeabilizing Solution 2

		(Contd. of page 7)
· Transport hazard class(es)		
· DOT, ADR, ADN, IMDG, IATA · Class	Void	
• Packing group • DOT, ADR, IMDG, IATA	Void	
• Environmental hazards: • Marine pollutant:	No	
· Special precautions for user	Not applicable.	
• Transport in bulk according to Annex MARPOL73/78 and the IBC Code	II of Not applicable.	
· Transport/Additional information:		
• DOT • Quantity limitations	On passenger aircraft/rail: Void On cargo aircraft only: Void	
· UN ''Model Regulation'':	-	

15 Regulatory information

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

SARA Section 355 (extremely hazardous substances) 50-00-0 formaldehyde	
• SARA Section 313 (specific toxic chemical listings)	
50-00-0 formaldehyde	
67-56-1 methanol	
· TSCA (Toxic Substances Control Act)	
111-46-6 diethylene glycol	
50-00-0 formaldehyde	
67-56-1 methanol	
9005-64-5 Polyoxethylenesorbitan Monolaurate (Tween-20)	
9041-08-1 Heparin Sodium	
7732-18-5 water	
· California Proposition 65 - Chemicals known to cause cancer	
50-00-0 formaldehyde	
· 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:	
67-56-1 methanol	



Printing date 03/09/2015

Reviewed on 03/09/2015

Product name: BD FACSTM Permeabilizing Solution 2

	(Contd. of page
· Carcinogenic categories	
• TLV (Threshold Limit Value established by ACGIH)	
50-00-0 formaldehyde	A2
• GHS label elements The product is classified and labeled acco. • Hazard pictograms GHS05, GHS06, GHS08 • Signal word Danger	rding to the Globally Harmonized System (GHS)
· Hazard-determining components of labeling:	
diethylene glycol	
formaldehyde	
methanol	
· Hazard statements	
Harmful if swallowed.	
Toxic in contact with skin or if inhaled.	
Causes skin irritation.	
Causes serious eye damage.	
May cause an allergic skin reaction.	
Suspected of causing genetic defects.	
May cause cancer. Route of exposure: Inhalative.	
May cause damage to organs. May cause respiratory irritation	n.
May cause damage to the kidneys through prolonged or repea	ted exposure. Route of exposure: Oral.
· Precautionary statements	
Wear protective gloves / eye protection.	
Wear protective clothing.	
Avoid breathing mist/vapours/spray.	
IF IN EYES: Rinse cautiously with water for several minutes.	Remove contact lenses, if present and easy to de
Continue rinsing.	
IF INHALED: Remove victim to fresh air and keep at rest in a	
IF SWALLOWED: Call a POISON CENTER/doctor if you fee	l unwell.
· National regulations	
• Technical instructions (air):	
Class Share in %	
Wasser 53.4	

Class	Snare in %
Wasser	53.4
Ι	13.5
NK	30.0

• Water hazard class: Water hazard class 2 (Self-assessment): hazardous for water. • Chemical safety assessment: A Chemical Safety Assessment has not been carried out.

16 Other information

To the best of our knowledge, the information contained herein is accurate. However, neither Becton, Dickinson and Company or any of its subsidiaries assumes any liabilities whatsoever for the accuracy or completeness of the information contained herein. Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.

· Contact: Technical Service Representative

• 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



Printing date 03/09/2015

Reviewed on 03/09/2015

Product name: BD FACSTM Permeabilizing Solution 2

	(Contd. of page 9)
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)	
LC50: Lethal concentration, 50 percent	
LD50: Lethal dose, 50 percent	
Flam. Liq. 2: Flammable liquids, Hazard Category 2	
Acute Tox. 3: Acute toxicity, Hazard Category 3	
Acute Tox. 4: Acute toxicity, Hazard Category 4	
Acute Tox. 2: Acute toxicity, Hazard Category 2	
Skin Corr. 1B: Skin corrosion/irritation, Hazard Category 1B	
Skin Irrit. 2: Skin corrosion/irritation, Hazard Category 2	
Eye Dam. 1: Serious eye damage/eye irritation, Hazard Category 1	
Skin Sens. 1: Sensitisation - Skin, Hazard Category 1	
Muta. 2: Germ cell mutagenicity, Hazard Category 2	
Carc. 1A: Carcinogenicity, Hazard Category 1A	
STOT SE 1: Specific target organ toxicity - Single exposure, Hazard Category 1	
STOT SE 2: Specific target organ toxicity - Single exposure, Hazard Category 2	
STOT SE 3: Specific target organ toxicity - Single exposure, Hazard Category 3	
STOT RE 2: Specific target organ toxicity - Repeated exposure, Hazard Category 2	
: Hazardous to the aquatic environment - AcuteHazard, Category 2	
	USA