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SAFETY DATA SHEET

Classified in accordance 29 CFR 1910.1200

1. Identification

Product identifier

Product No.:	Product name:	Common name(s), synonym(s)
340345	BD FACSClean™	No data available

Recommended restrictions

Recommended use: Scientific and Industrial laboratory use.

Restrictions on use: None known.

Manufacturer/Importer/Distributor Information

Manufacturer

Company Name: Becton, Dickinson and Company - BD Biosciences

Address: 2350 Qume Drive
San Jose, CA 95131
USA

Telephone: 1 877 232 8995 or 1 800 424 9300

Fax: not available

Contact Person: Technical Services

E-mail: ResearchApplications@bd.com or ClinicalApplications@bd.com

Emergency telephone number: CHEMTREC 1 800 424 9300

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2. Hazard(s) identification

Hazard Classification

Health Hazards

Skin Corrosion/Irritation	Category 2
Serious Eye Damage/Eye Irritation	Category 2A

Environmental Hazards

Acute hazards to the aquatic environment	Category 2
Chronic hazards to the aquatic environment	Category 3

Label Elements

Hazard Symbol:



Signal Word:

Warning

Hazard Statement:

H315: Causes skin irritation.
H319: Causes serious eye irritation.
H401: Toxic to aquatic life.
H412: Harmful to aquatic life with long lasting effects.

Precautionary Statements

Prevention:

P264: Wash face, hands and any exposed skin thoroughly after handling.
P273: Avoid release to the environment.
P280: Wear protective gloves/protective clothing/eye protection/face protection.

Response:

P302+P352: IF ON SKIN: Wash with plenty of soap and water.
P332+P313: If skin irritation occurs: Get medical advice/attention.
P362: Take off contaminated clothing.
P305+P351+P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.



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P337+P313: If eye irritation persists: Get medical advice/attention.

Disposal:

P501: Dispose of contents/ container to an approved facility in accordance with local, regional, national and international regulations.

Other hazards which do not result in GHS classification:

None.

3. Composition/information on ingredients

Mixtures

Chemical Identity	Common name and synonyms	CAS number	Content in percent (%) [*]
Hypochlorous acid, sodium salt (1:1)	No data available.	7681-52-9	1.1887%
Sodium hydroxide (Na(OH))	No data available.	1310-73-2	0.7935%

* All concentrations are percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.

4. First-aid measures

Description of first aid measures

General information:

Causes serious eye irritation. Causes skin irritation.

Inhalation:

Provide fresh air, warmth and rest, preferably in comfortable upright sitting position.



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Skin Contact:	Promptly flush contaminated skin with soap or mild detergent and water. Promptly remove clothing if penetrated and flush the skin with water.
Eye contact:	Immediately flush with plenty of water for at least 15 minutes. If easy to do, remove contact lenses. Get medical attention.
Ingestion:	DO NOT induce vomiting. Get medical attention immediately.
Personal Protection for First-aid Responders:	No data available.

Most important symptoms and effects, both acute and delayed

Symptoms: No data available.

Hazards: Causes serious eye irritation. Causes skin irritation.

Indication of immediate medical attention and special treatment needed

Treatment: Get medical attention if symptoms occur.

5. Fire-fighting measures

General Fire Hazards: Extinguish all ignition sources. Avoid sparks, flames, heat and smoking. Ventilate. Use water to keep fire exposed containers cool and disperse vapors.

Suitable (and unsuitable) extinguishing media



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Suitable extinguishing media: Use fire-extinguishing media appropriate for surrounding materials.

Unsuitable extinguishing media: Avoid water in straight hose stream; will scatter and spread fire.

Special hazards arising from the substance or mixture: Fire or excessive heat may produce hazardous decomposition products.

Special protective equipment and precautions for fire-fighters

Special fire-fighting procedures: No unusual fire or explosion hazards noted.

Special protective equipment for fire-fighters: Firefighters must use standard protective equipment including flame retardant coat, helmet with face shield, gloves, rubber boots, and in enclosed spaces, SCBA.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures: Contact local authorities in case of spillage to drain/aquatic environment. Ensure suitable personal protection (including respiratory protection) during removal of spillages in a confined area.

Accidental release measures: No data available.



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Methods and material for containment and cleaning up:

Absorb spillage with suitable absorbent material. Prevent runoff from entering drains, sewers, or streams. See Section 8 of the SDS for Personal Protective Equipment. For waste disposal, see section 13 of the SDS.

Environmental Precautions:

Avoid release to the environment.

7. Handling and storage

Handling

Technical measures:

No data available.

Local/Total ventilation:

No data available.

Safe handling advice:

When using do not eat, drink or smoke. Read and follow manufacturer's recommendations. Use personal protective equipment as required.

Contact avoidance measures:

No data available.

Storage

Safe storage conditions:

Store in a cool, dry place. Keep container tightly closed. Keep from contact with oxidizing materials.

Safe packaging materials:

No data available.



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Storage Temperature: 2 - 30 °C

8. Exposure controls/personal protection

Control Parameters

Occupational Exposure Limits

Chemical Identity	Type	Exposure Limit Values		Source
Sodium hydroxide (Na(OH))	Ceiling		2 mg/m3	OSHA Z1A
	Ceiling		2 mg/m3	TN OEL
Sodium hydroxide (Na(OH)) - Particulate.	AN ESL		2 µg/m3	TX ESL
	ST ESL		20 µg/m3	TX ESL
Sodium hydroxide (Na(OH))	Ceiling		2 mg/m3	US CA OEL
	Ceiling		2 mg/m3	ACGIH
	Ceil_Time		2 mg/m3	NIOSH
	PEL		2 mg/m3	OSHA Z1
	IDLH		10 mg/m3	NIOSH IDLH

Please refer to the latest edition of the appropriate source text and consult an industrial hygienist or similar professional, or local agencies, for further information.

Biological Limit Values

No biological exposure limits noted for the ingredient(s).



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Appropriate Engineering Controls

No special requirements under ordinary conditions of use and with adequate ventilation.

Individual protection measures, such as personal protective equipment

Eye/face protection:

Wear safety glasses with side shields (or goggles).

Skin Protection

Hand Protection:

Material: Chemical resistant gloves

Additional Information: Wash hands after contact. Material: Suitable gloves can be recommended by the glove supplier.

Skin and Body Protection:

Wear a lab coat or similar protective clothing.

Respiratory Protection:

If engineering controls do not maintain airborne concentrations below recommended exposure limits (where applicable) or to an acceptable level (in countries where exposure limits have not been established), an approved respirator must be worn.

Hygiene measures:

Observe good industrial hygiene practices.

9. Physical and chemical properties

Information on basic physical and chemical properties

Appearance



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Physical state:	liquid
Form:	Aqueous Solution
Color:	Colorless
Odor:	Characteristic
Odor Threshold:	No data available.
Freezing point:	No data available.
Boiling Point:	No data available.
Flammability:	No data available.
Upper/lower limit on flammability or explosive limits	
Explosive limit - upper:	No data available.
Explosive limit - lower:	No data available.
Flash Point:	No data available.
Autoignition Temperature:	No data available.
Decomposition Temperature:	No data available.
pH:	No data available.
Viscosity	
Dynamic viscosity:	No data available.
Kinematic viscosity:	No data available.
Flow Time:	No data available.
Solubility(ies)	
Solubility in Water:	Soluble



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Solubility (other):	No data available.
Partition coefficient (n-octanol/water):	No data available.
Vapor pressure:	No data available.
Relative density:	No data available.
Density:	No data available.
Bulk density:	No data available.
Relative vapor density:	No data available.

Other information

No data available

10. Stability and reactivity

Reactivity:	Material is stable under normal conditions.
Chemical Stability:	Material is stable under normal conditions.
Possibility of hazardous reactions:	Material is stable under normal conditions.
Conditions to avoid:	Avoid exposure to high temperatures or direct sunlight.



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Incompatible Materials: Water reactive material. Metals. Avoid contact with oxidizers or reducing agents. Avoid contact with acids.

Hazardous Decomposition Products: Contact with acids liberates toxic gas. Stable; however, may decompose if heated.

11. Toxicological information

Information on likely routes of exposure

Inhalation: No data available.

Skin Contact: No data available.

Eye contact: No data available.

Ingestion: No data available.

Acute toxicity (list all possible routes of exposure)

Oral

Product: No data available.

Components:

Hypochlorous acid, sodium salt (1:1) No data available.

Sodium hydroxide (Na(OH)) No data available.



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Dermal

Product: No data available.

Components:

Hypochlorous acid, sodium salt (1:1) No data available.

Sodium hydroxide (Na(OH)) No data available.

Inhalation

Product: No data available.

Components:

Hypochlorous acid, sodium salt (1:1) No data available.

Sodium hydroxide (Na(OH)) No data available.

Repeated dose toxicity

Product: No data available.

Components:

Hypochlorous acid, sodium salt (1:1) LOAEL Rat, Female, Male, Inhalation, <= 3 mg/m3, Inhalation Read-across from supporting substance (structural analogue or surrogate), Supporting study

Sodium hydroxide (Na(OH)) No data available.

Skin Corrosion/Irritation

Product: No data available.

Components:



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Hypochlorous acid,
sodium salt (1:1) No data available.

Sodium hydroxide
(Na(OH)) No data available.

Serious Eye Damage/Eye Irritation

Product: No data available.

Components:

Hypochlorous acid,
sodium salt (1:1) No data available.

Sodium hydroxide
(Na(OH)) Mild irritant, in vivo, Rabbit, 4 d, OECD GHS
Mild irritant, in vivo, Rabbit, 2 d, OECD GHS
Mild irritant, in vivo, Rabbit, 1 d, OECD GHS
Mild irritant, in vivo, Rabbit, 3 d, OECD GHS

Respiratory or Skin Sensitization

Product: No data available.

Components:

Hypochlorous acid,
sodium salt (1:1) Skin sensitization:, in vivo, Guinea pig, Non sensitising

Sodium hydroxide
(Na(OH)) No data available.

Carcinogenicity

Product: No data available.

Components:

Hypochlorous acid,
sodium salt (1:1) No data available.



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Sodium hydroxide (Na(OH)) No data available.

IARC Monographs on the Evaluation of Carcinogenic Risks to Humans:

No carcinogens present or none present in regulated quantities

ACGIH: US.ACGIH Threshold Limit Values:

No carcinogens present or none present in regulated quantities

US. National Toxicology Program (NTP) Report on Carcinogens:

No carcinogens present or none present in regulated quantities

US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050), as amended:

No carcinogens present or none present in regulated quantities

Germ Cell Mutagenicity

In vitro

Product: No data available.

Components:

Hypochlorous acid, sodium salt (1:1) No data available.

Sodium hydroxide (Na(OH)) No data available.

In vivo

Product: No data available.

Components:



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Hypochlorous acid,
sodium salt (1:1) No data available.

Sodium hydroxide
(Na(OH)) No data available.

Reproductive toxicity

Product: No data available.

Components:

Hypochlorous acid,
sodium salt (1:1) No data available.

Sodium hydroxide
(Na(OH)) No data available.

Specific Target Organ Toxicity - Single Exposure

Product: No data available.

Components:

Hypochlorous acid,
sodium salt (1:1) No data available.

Sodium hydroxide
(Na(OH)) No data available.

Specific Target Organ Toxicity - Repeated Exposure

Product: No data available.

Components:

Hypochlorous acid,
sodium salt (1:1) No data available.

Sodium hydroxide
(Na(OH)) No data available.

Aspiration Hazard



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Product: No data available.

Components:

Hypochlorous acid, sodium salt (1:1) No data available.

Sodium hydroxide (Na(OH)) No data available.

Information on health hazards

Other hazards

Product: No data available.

12. Ecological information

General information:

Ecotoxicity:

Acute hazards to the aquatic environment:

Fish

Product: Toxic to aquatic organisms.

Components:

Hypochlorous acid, sodium salt (1:1) LC 50, Various, 24 h, 0.14 mg/lflow-through, Experimental result, Supporting study

LC 50, Various, 96 h, 0.09 mg/lflow-through, Experimental result, Supporting study

LC 100, Fundulus heteroclitus, 30 min, 0.65 mg/lflow-through, Not



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specified, Supporting study

LC 50, Various, 96 h, 0.687 mg/lflow-through, Experimental result, Key study

LC 50, Various, 96 h, 0.178 mg/lflow-through, Experimental result, Key study

Sodium hydroxide (Na(OH)) No data available.

Aquatic Invertebrates

Product: Toxic to aquatic organisms.

Components:

Hypochlorous acid, sodium salt (1:1) LC 50, Brachionus calyciflorus, 24 h, 0.37 mg/lStatic, Not specified, Supporting study

Sodium hydroxide (Na(OH)) No data available.

Toxicity to Aquatic Plants

Product: No data available.

Components:

Hypochlorous acid, sodium salt (1:1) No data available.

Sodium hydroxide (Na(OH)) No data available.

Toxicity to microorganisms

Product: No data available.

Components:

Hypochlorous acid, sodium salt (1:1) No data available.



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Sodium hydroxide (Na(OH)) No data available.

Chronic hazards to the aquatic environment:

Fish

Product: Substantial amounts of the product may lead to a local change in acidity in small water systems which may have adverse effects on aquatic organisms.

Components:

Hypochlorous acid, sodium salt (1:1) No data available.

Sodium hydroxide (Na(OH)) No data available.

Aquatic Invertebrates

Product: Aquatic plants and animals may be adversely affected if they have direct contact with this material.

Components:

Hypochlorous acid, sodium salt (1:1) No data available.

Sodium hydroxide (Na(OH)) No data available.

Toxicity to microorganisms

Product: No data available.

Components:

Hypochlorous acid, sodium salt (1:1) No data available.



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Sodium hydroxide (Na(OH)) No data available.

Persistence and Degradability

Biodegradation

Product: The subject product is expected to biodegrade and is not expected to persist for long periods in an aquatic environment.

Components:

Hypochlorous acid, sodium salt (1:1) No data available.

Sodium hydroxide (Na(OH)) No data available.

BOD/COD Ratio

Product: No data available.

Components:

Hypochlorous acid, sodium salt (1:1) No data available.

Sodium hydroxide (Na(OH)) No data available.

Bioaccumulative potential

Bioconcentration Factor (BCF)

Product: No data available.

Components:



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Hypochlorous acid, sodium salt (1:1) No data available.

Sodium hydroxide (Na(OH)) No data available.

Partition Coefficient n-octanol / water (log Kow)

Product: No data available.

Components:

Hypochlorous acid, sodium salt (1:1) No data available.

Sodium hydroxide (Na(OH)) No data available.

Mobility in soil:

Product No data available.

Components:

Hypochlorous acid, sodium salt (1:1) No data available.

Sodium hydroxide (Na(OH)) No data available.

Results of PBT and vPvB assessment:

Product No data available.

Components:

Hypochlorous acid, sodium salt (1:1) No data available.



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Sodium hydroxide (Na(OH)) No data available.

Other adverse effects:

Other hazards

Product: None known.

13. Disposal considerations

General information: This material and its container must be disposed of as hazardous waste. Dispose of waste and residues in accordance with local authority requirements.

Disposal methods: Dispose of waste at an appropriate treatment and disposal facility in accordance with applicable laws and regulations, and product characteristics at time of disposal.

Contaminated Packaging: Dispose of contents/container to an appropriate treatment and disposal facility in accordance with applicable laws and regulations, and product characteristics at time of disposal.

14. Transport information

Environmental Hazards

Environmentally Hazardous: No

Marine Pollutant: No



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IATA

Not regulated.

IMDG

Not regulated.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable for product as supplied.

15. Regulatory information

US Federal Regulations

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

None present or none present in regulated quantities.

US. Toxic Substances Control Act (TSCA) Section 5(a)(2) Final Significant New Use Rules (SNURs) (40 CFR 721, Subpt E)

None present or none present in regulated quantities.

US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050), as amended

None present or none present in regulated quantities.



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CERCLA Hazardous Substance List (40 CFR 302.4):

Chemical Identity

SODIUM HYPOCHLORITE

SODIUM HYDROXIDE

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories

Skin Corrosion or Irritation, Serious eye damage or eye irritation

**US. EPCRA (SARA Title III) Section 304 Extremely Hazardous Substances Reporting
Quantities and the Comprehensive Environmental Response, Compensation, and Liability
Act (CERCLA) Hazardous Substances**

None present or none present in regulated quantities.

US. EPCRA (SARA Title III Section 313 Toxic Chemical Release Inventory (TRI) Reporting

None present or none present in regulated quantities.

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130):

None present or none present in regulated quantities.

Clean Water Act Section 311 Hazardous Substances (40 CFR 117.3)

Chemical Identity

SODIUM HYPOCHLORITE

SODIUM HYDROXIDE



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US State Regulations

US. California Proposition 65

No ingredient requiring a warning under CA Prop 65.

International regulations

Montreal protocol

Not applicable

Stockholm convention

Not applicable

Rotterdam convention

Not applicable

Kyoto protocol

Not applicable

16. Other information, including date of preparation or last revision
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Issue Date: 04/06/2012

Version #: 3.3



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Abbreviations and acronyms:

ACGIH:	US. ACGIH Threshold Limit Values, as amended
NIOSH IDLH:	US. NIOSH. Immediately Dangerous to Life or Health (IDLH) Values, as amended
NIOSH/GUIDE:	US. NIOSH: Pocket Guide to Chemical Hazards, as amended
OSHA_TRANS:	US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000), as amended
TN OEL:	US. Tennessee. OELs. Occupational Exposure Limits, Table Z1A, as amended
TX ESL:	US. Texas. Effects Screening Levels (Texas Commission on Environmental Quality), as amended
US CA OEL:	US. California Code of Regulations, Title 8, Section 5155. Airborne Contaminants, as amended
Z1A:	US. OSHA Table Z-1-A (29 CFR 1910.1000), as amended
ACGIH / Ceiling:	Ceiling Limit Value:
NIOSH IDLH / IDLH:	Immediately dangerous to life or health (IDLH) concentration:
NIOSH/GUIDE / Ceil_Time:	Ceiling Limit Value and Time Period (if specified):
OSHA_TRANS / PEL:	Permissible exposure limit:
TN OEL / Ceiling:	Ceiling Limit Value:
TX ESL / ST ESL:	Short-Term ESL:
TX ESL / AN ESL:	Annual ESL:
US CA OEL / Ceiling:	Ceiling Limit Value:
Z1A / Ceiling:	Ceiling Limit Value:

AIIC - Australian Inventory of Industrial Chemicals; ASTM - American Society for the Testing of Materials; bw - Body weight; CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DOT - Department of Transportation; DSL -

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Domestic Substances List (Canada); ECx - Concentration associated with x% response; EHS - Extremely Hazardous Substance; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; ERG - Emergency Response Guide; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; HMIS - Hazardous Materials Identification System; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; MSHA - Mine Safety and Health Administration; n.o.s. - Not Otherwise Specified; NFPA - National Fire Protection Association; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NTP - National Toxicology Program; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; RCRA - Resource Conservation and Recovery Act; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RQ - Reportable Quantity; SADT - Self-Accelerating Decomposition Temperature; SARA - Superfund Amendments and Reauthorization Act; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TECI - Thailand Existing Chemicals Inventory; TSCA - Toxic Substances Control Act (United States); UN - United Nations; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative

Source of information: European Chemicals Agency (ECHA): Information on Chemicals.

Further Information: No data available.



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