

Kit SDS Cover SheetDoc. ID: A09433: Rev. AE
Revised (year/month/day) 2015/05/08**Product Information**

Product Name	Phosphorus Reagent
Part Number	A09426
Series Name	SYNCHRON Systems

Components

Description	Phosphorus Diluent (Compartment A) Molybdate Solution (Compartment B)
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Transport Information

Shipping Information	IATA	IMDG	US DOT	European ADR	Canadian TDG
UN/ID Number	2796	2796	2796	2796	2796
Shipping Name	Sulfuric acid solution				
Hazard Class	8 Corrosives	8 Corrosive substances	8 Corrosive material	8 Corrosive substances	8 Corrosives
Subsidiary Risk	None	None	None	None	None
Classification Code	Not applicable	Not applicable	Not applicable	C1	Not applicable
Packing Group	II	II	II	II	II
Special Provisions	None	None	A3	None	None
Additional information					
IATA ERG Code	8L	Not applicable	Not applicable	Not applicable	Not applicable
EmS	Not applicable	F-A; S-B	Not applicable	Not applicable	Not applicable
NAERG Code	Not applicable	Not applicable	157	Not applicable	157
Environmental Hazards					
Marine Pollutant	Not applicable	No	Not applicable	Not applicable	Not applicable
Special Precautions for user					
Warning: Corrosive substances.					



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Section 1 Identification of the Substance/mixture and of the Company/undertaking

1.1 Product Identifier

Product Name Phosphorus Diluent (Compartment A)
Part Number Component of P/N A09426
Series Name SYNCHRON Systems

1.2 Relevant identified uses of the substance or mixture and uses advised against

Product Use For In Vitro Diagnostic Use. See product literature for details.

1.3 Details of the supplier of the safety data sheet

Manufacturer

Beckman Coulter, Inc.
250 S. Kraemer Blvd
Brea, CA 92821, U.S.A.
Tel: 800-854-3633

EC REP Address

Beckman Coulter Eurocenter S.A.
22, rue Juste-Oliver, Case Postale 1044,
CH-1260 Nyon 1, Switzerland.
Telephone +41 (0)22 365 36 11
Monday through Friday, 9:00 am to
7:00pm)

e-mail address SDSNT@beckman.com

1.4 Emergency telephone number

Telephone number (24H) Chemtrec Emergency Tel No. U.S.A. 800-424-9300, International (001) 703-527-3887

Distributor and Emergency Phone No.

Refer to attached list, Document ID: [472050](#), for local distributor and emergency phone numbers.

Section 2 Hazards Identification

2.1 Classification of substance or mixture

Product Description Mixture
Colorless; Clear; Liquid; Odorless

Classification according to EC 1272/2008 (CLP/GHS)

Skin Corrosion Category 1
Eye Damage Category 1

Classification according to EC Directives 1999/45/EC and 67/548/EEC

C;R35

Section 2 Hazards Identification (Continued)

Classification according to US-OSHA (HCS 29 CFR 1910.1200) and UN GHS

Acute Toxicity Oral, Category 5
Skin Corrosion Category 1
Eye Damage Category 1
Aquatic Hazard Acute, Category 3

2.2 Label Elements

According to EC 1272/2008 (CLP/GHS), US-OSHA and UN GHS

Hazardous Ingredients

Sulfuric Acid
Sodium Hypochlorite
Guanidine Hydrochloride
Coco Alkyl Bis(2-Hydroxyethyl)Methyl Quaternary Ammonium Chlorides
Ethoxylated

Pictogram



Signal Word

DANGER

Hazard Statements

H303 May be harmful if swallowed
H314 Causes severe skin burns and eye damage.
H402 Harmful to aquatic life.

Precautionary Statements

P273 Avoid release to the environment.
P280 Wear protective gloves, protective clothing and eye/face protection.
P301+P330+P331 IF SWALLOWED: rinse mouth. Do NOT induce vomiting.
P303+P361+P353 IF ON SKIN (or hair): Rinse skin with water.
P304+P340 IF INHALED: Remove person to fresh air and keep at rest in a position comfortable for breathing.
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 or doctor/physician.
P363 Wash contaminated clothing before reuse.
P405 Store locked up.
P501 Dispose of contents/container in accordance with local/national regulations
Product label will display most significant precautionary statements. 12.4% of product contains ingredients of unknown oral toxicity. 25.7% of product contains ingredients of unknown hazards to aquatic environment.

2.3 Other hazards

Results of PBT and vPvB assessment
PBT: Not applicable.
vPvB: Not applicable.

See Section 11 Toxicological Information for more detailed health information.

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Section 3 Composition and Information on Ingredients

3.2 Mixtures

Hazardous Ingredients:		Hazard Classification of Pure Ingredients			
Chemical Name	% by wt.	EU-67/548/EEC	EU 1272/2008 CLP/GHS	GHS	
Guanidine Hydrochloride CAS # 50-01-1 EINECS # 200-002-3 Index # 607-148-00-0	10 - 20	Xn;R22-36/38	Acute Tox. Oral 4 Eye Irrit. 2 Skin Irrit. 2 H302; H315; H319	Acute Tox. Inhal. 5 Acute Tox. Oral 4 Eye Irrit. 2 Skin Irrit. 2 H302; H315; H319; H333	
Sulfuric Acid CAS # 7664-93-9 EINECS # 231-639-5 Index # 016-020-00-8	1 - 10	C;R35	Eye Dam. 1 Skin Corr. 1A H314; H318	Eye Dam. 1 Skin Corr. 1A H314; H318	
Coco Alkyl Bis(2-Hydroxy- ethyl)Methyl Quaternary Am- monium Chlorides Ethoxylated CAS # 61791-10-4 EINECS # Not available Index # Not available	1 - 10	Xn;R22-36/37/38	Acute Tox. Oral 4 Eye Irrit. 2 STOT SE 3 Skin Irrit. 2 H302; H315; H319; H335	Acute Tox. Oral 4 Eye Irrit. 2 STOT SE 3 Skin Irrit. 2 H302; H315; H319; H335	
Sodium Hypochlorite CAS # 7681-52-9 EINECS # 231-668-3 Index # 017-011-00-1	< 1	C;R31-34 N;R50	Aquatic Acute 1 Eye Dam. 1 Skin Corr. 1B H314; H318; H400	Aquatic Acute 1 Eye Dam. 1 Skin Corr. 1B H314; H318; H400	

See section 8 for available Occupational exposure limits

See Section 15 for additional regulatory information

See Section 16 for hazard class, hazard statements and risk phrase description

Section 4 First Aid Measures

4.1 Description of first aid measures

Inhalation

If product is inhaled, move exposed individual to fresh air. If individual is not breathing, begin artificial respiration immediately and obtain medical attention.

Eye Contact

If product enters eyes, wash eyes gently under running water for 15 minutes or longer, making sure that the eyelids are held open. If pain or irritation occur, obtain medical attention.

Skin Contact

In case of skin contact, flush with copious amounts of water for at least 15 minutes. If pain or irritation occur, obtain medical attention.

Ingestion

If ingested, wash mouth out with water. If irritation or discomfort occurs, seek medical attention.

4.2 Most important symptoms and effects, both acute and delayed

Corrosive. May cause burns to eyes, skin and respiratory tract.

May be harmful if swallowed

See Section 11 Toxicological Information for more detailed health information.

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Section 4 First Aid Measures (Continued)

4.3 Indication of any immediate medical attention and special treatment needed

In case of contact with eyes, rinse immediately with plenty of water and seek medical attention.

If skin irritation or rash occurs: Get medical advice/attention.

Section 5 Fire Fighting Measures

Flammable Properties Nonflammable aqueous solution.

5.1 Extinguishing Media In case of fire use carbon dioxide (CO₂), dry chemical, water spray or foam.
For large fires use extinguishing media suitable for surrounding fire.

5.2 Special hazards arising from the substance or mixture

Special Fire and Explosion Hazards

No special hazards determined.

Hazardous Combustion Products

No combustion products posing significant hazards are expected from this product (an aqueous solution).

5.3 Advice for fire fighters

Protective Equipment Self-contained breathing apparatus is recommended for firefighters in all chemical fire situations.

5.4 Additional information No further relevant information available.

Section 6 Accidental Release Measures

6.1 Personal precautions, protective equipment and emergency procedures

Personal Precautions Observe general safety guidelines for protection; avoid eye and skin contact.
Wear protective gloves, protective clothing and tightly sealed eye/face protection.

6.2 Environmental Precautions Contain spill to prevent migration.
Do not allow the undiluted product to enter sewers/surface or ground water.
Dispose of contents/container in accordance with local regulations

6.3 Methods and material for containment and cleaning up

Spill and Leak Procedures Absorb spilled material with an appropriate inert, non-flammable absorbent and dispose according to local regulations.

6.4 Reference to other sections Refer sections 8 and 13.

Section 7 Handling and Storage

7.1 Precautions for safe handling Use good laboratory procedures; avoid eye and skin contact.

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Section 7 Handling and Storage (Continued)

7.2 Conditions for safe storage, including any incompatibilities

Store at 2 to 26°C , as directed on the product label. Keep container closed.
To maintain product quality, store according to the instructions in the product labeling.
Store away from strong acids, strong bases, strong oxidizers and incompatible materials (section 10).

7.3 Specific end uses

No further relevant information available.

Section 8 Exposure Controls and Personal Protection

8.1 Control parameters

Exposure Limits

US OSHA

Sulfuric Acid
CAS # 7664-93-9 1 mg/m³ TWA

ACGIH

Sulfuric Acid
CAS # 7664-93-9 0.2 mg/m³ TWA (thoracic fraction)

DFG MAK

Sulfuric Acid
CAS # 7664-93-9 0.1 mg/m³ Peak (inhalable fraction); 0.1 mg/m³ TWA MAK (inhalable fraction)

Ireland

Sulfuric Acid
CAS # 7664-93-9 1 mg/m³ TWA

IOELVs

Sulfuric Acid
CAS # 7664-93-9 0.05 mg/m³ TWA

NIOSH

Sulfuric Acid
CAS # 7664-93-9 15 mg/m³ IDLH; 1 mg/m³ TWA

Japan

None established

8.2 Exposure controls

Engineering Controls

No special engineering controls are required. Use with good general ventilation.

Eye Protection

Safety glasses or chemical goggles should be worn to prevent eye contact.
Refer U.S. OSHA 29 CFR 1910.133, European Standard EN166 or appropriate government standards.

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Section 8 Exposure Controls and Personal Protection (Continued)

Skin Protection	Impervious gloves, such as Nitrile or equivalent, should be worn to prevent skin contact. Refer U.S. OSHA 29 CFR 1910.138, European Standard EN374 or appropriate government standards.
Respiratory Protection	Under normal conditions, the use of this product should not require respiratory protection. If overexposure should occur and ventilation is not adequate to maintain airborne concentrations at acceptable levels, the use of respiratory protection should be evaluated by a qualified professional.

Section 9 Physical and Chemical Properties

9.1 Information on basic physical and chemical properties

Physical State	Liquid	Specific Gravity (Water=1.0)	≈ 1.09 @24°C
Color	Colorless	Solubility	
Transparency	Clear	Water	Miscible
Odor	Odorless	Organic	Not determined
pH	1.0	Partition coefficient: n-octanol/water	Not determined
Freezing Point	Not determined	Auto-ignition Temp.	Not applicable
Boiling Point	Not determined	Decomposition Temperature	Not determined
Flash Point	Not applicable	Percent Volatiles	Not applicable
Evaporation Rate	Not determined	Vapor Pressure	Not determined
Flammability (Solid, Gas)	Not applicable	Viscosity	Not determined
Flammability Limits	Not determined	Explosive Properties	Not applicable
Vapor Density	Not determined	Oxidizing Properties	Not applicable
Odor Threshold	Sulfuric Acid no geometric mean air odor threshold		

9.2 Other Information No further relevant information available.

Section 10 Stability and Reactivity

- 10.1 Reactivity** No further relevant information available.
- 10.2 Chemical Stability** The product is stable in accordance with recommended storage conditions.
- 10.3 Possibility of hazardous reactions** No further relevant information available.

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Section 10 Stability and Reactivity (Continued)

- 10.4 Conditions to Avoid** To maintain product performance keep away from strong acids, strong bases, strong oxidizers.
Avoid exposure to heat and direct sunlight.
- 10.5 Incompatible materials** No further relevant information available.
- 10.6 Hazardous Decomposition Products**
No decomposition products posing significant hazards would be expected from this product (an aqueous solution).

Section 11 Toxicological Information

11.1 Information on toxicological effects

Toxicity Data for Hazardous Ingredients

Guanidine Hydrochloride CAS # 50-01-1	Dermal LD50 Rabbit >2000 mg/kg
Sulfuric Acid CAS # 7664-93-9	Inhalation LC50 Mouse 320 mg/m ³ 2 h; Inhalation LC50 Rat 510 mg/m ³ 2 h; Inhalation LC50 Rat 347 ppm 1 h; Oral LD50 Rat 2140 mg/kg
Sodium Hypochlorite CAS # 7681-52-9	Oral LD50 Rat 8200 mg/kg; Dermal LD50 Rabbit >10000 mg/kg
Coco Alkyl Bis(2-Hydrox- yethyl)Methyl Quaternary Am- monium Chlorides Ethoxylated CAS # 61791-10-4	Oral LD50 Rat 580 mg/kg

Primary Routes of Exposure	Eye contact, ingestion, inhalation, and skin contact.
Skin Corrosion/Irritation	Contact may cause severe skin burns.
Serious eye damage/eye irritation	Contact may cause serious eye damage.
Respiratory/skin sensitization	No data available.
Carcinogenicity	Sulfuric Acid is listed with OSHA as a carcinogen; IARC as Group 1 carcinogen to humans; ACGIH as A2 Suspected Human Carcinogen.
Germ cell mutagenicity	No data available.
Reproductive Toxicity	No data available.
Specific target organ toxicity – single exposure	No data available.
Specific target organ toxicity – repeated exposure	No data available.
Aspiration hazard	No data available.
Other Information	May be harmful if swallowed

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Section 12 Ecological Information

12.1 Ecotoxicity

Fresh Water Species

Guanidine Hydrochloride CAS # 50-01-1	48 h LC50 Leuciscus idus: 1758 mg/L
Sulfuric Acid CAS # 7664-93-9	96 h LC50 Brachydanio rerio: >500 mg/L [static]
Sodium Hypochlorite CAS # 7681-52-9	96 h LC50 Pimephales promelas: 0.06 - 0.11 mg/L [flow-through]; 96 h LC50 Pimephales promelas: 4.5 - 7.6 mg/L [static]; 96 h LC50 Lepomis macrochirus: 0.4 - 0.8 mg/L [static]; 96 h LC50 Lepomis macrochirus: 0.28 - 1 mg/L [flow-through]; 96 h LC50 Oncorhynchus mykiss: 0.05 - 0.771 mg/L [flow-through]; 96 h LC50 Oncorhynchus mykiss: 0.03 - <0.19 mg/L [semi-static]; 96 h LC50 Oncorhynchus mykiss: 0.18 - 0.22 mg/L [static]
	No information available.

Microtox

Water Flea

Sulfuric Acid CAS # 7664-93-9	24 h EC50 Daphnia magna: 29 mg/L
Sodium Hypochlorite CAS # 7681-52-9	96 h EC50 Daphnia magna: 2.1 mg/L; 48 h EC50 Daphnia magna: 0.033 - 0.044 mg/L [Static]

Fresh Water Algae

Sodium Hypochlorite CAS # 7681-52-9	24 h EC50 Skeletonema costatum: 0.095 mg/L
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12.2 Persistence and degradability Not determined for the product.

12.3 Bioaccumulation Not determined for the product.

12.4 Mobility in soil Not determined for the product.

12.5 Results of PBT and vPvB assessment

Not determined for the product. PBT: Not applicable, vPvB: Not applicable.

12.6 Other Adverse Effects This product is classified as environmentally hazardous. Do not allow undiluted product to enter sewer/surface or ground water. Dispose of contents/container to in accordance with local/national regulations

Section 13 Disposal Considerations

13.1 Waste treatment methods

Product Waste Disposal

Chemical residues and remains should be routinely handled as special waste. This must be disposed of in compliance with anti-pollution and other laws of the country concerned. To ensure compliance we recommend that you contact the relevant (local) authorities and/or an approved waste-disposal company for information.

Package disposal

Dispose of waste product, unused product and contaminated packaging in compliance with federal, state and local regulations. If unsure of the applicable requirements, contact the authorities for information.

13.2 Additional information

Suggested European waste catalogue 18 01 06* - chemicals consisting of or containing dangerous substances. Dispose in accordance with national, state and local waste regulations.

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Section 14 Transport Information

Shipping Information	IATA	IMDG	US DOT	European ADR	Canadian TDG
14.1 UN/ID Number	2796	2796	2796	2796	PIN - 2796
14.2 Shipping Name	Sulfuric acid solution				
14.3 Hazard Class	8 Corrosives	8 Corrosive substances	8 Corrosive material	8 Corrosive substances	8 Corrosives
Subsidiary Risk	None	None	None	None	None
Classification Code	Not applicable	Not applicable	Not applicable	C1	Not applicable
14.4 Packing Group	II	II	II	II	II
Special Provisions	None	None	A3	None	None
Additional information					
IATA ERG Code	8L	Not applicable	Not applicable	Not applicable	Not applicable
EmS	Not applicable	F-A; S-B	Not applicable	Not applicable	Not applicable
NAERG Code	Not applicable	Not applicable	157	Not applicable	157
14.5 Environmental Hazards					
Marine Pollutant	Not applicable	No	Not applicable	Not applicable	Not applicable
14.6 Special Precautions for user	Warning: Corrosive substances.				
14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code	Not applicable				

Section 15 Regulatory Information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture	
<u>US Federal and State Regulations</u>	
SARA 313	Sulfuric Acid is subject to reporting requirements of Section 313, Title III of SARA. 1.0 % de minimis concentration (acid)
CERCLA RG's, 40 CFR 302.4	Sulfuric Acid is listed. Sodium Hypochlorite is listed.

Section 15 Regulatory Information (Continued)

California Proposition 65

Sulfuric Acid has been identified by the State of California to cause cancer. The State of California has adopted a regulation which requires a warning be given to individual who may be exposed to chemicals identified by the State to cause cancer or reproductive harm. Accordingly, Beckman Coulter advises you of the following warning:

WARNING: This product contains a chemical known to the State of California to cause cancer.

Massachusetts MSL

Sulfuric Acid is listed.
Sodium Hypochlorite is listed.

New Jersey Dept. of Health RTK List

Sulfuric Acid is listed.
Sodium Hypochlorite is listed.

Pennsylvania RTK

Sulfuric Acid is listed.
Sodium Hypochlorite is listed.

EU Regulations

This SDS complies with EC Regulations 1907/2006 (REACH) and amendments.

Water Hazard Class (Germany) WGK 2, water endangering

REACH 1907/2006 EC - Annex XIV - list of substances subject to authorization.

No ingredients listed.

According to EC Directives (1999/45/EC and 67/548 EEC)

Corrosive

C



Risk and Safety Phrases

R35 Causes severe burns.

S26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

S45 In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

Canada

This product is exempt from WHMIS label and SDS requirements.

PIN

2796

Ingredients on Ingredient Disclosure List

Sulfuric Acid
Sodium Hypochlorite

Ingredients with unknown toxicological properties

Product is exempt

15.2 Chemical Safety Assessment A Chemical Safety Assessment has not been carried out.

Some hazardous ingredients listed in Section 15 are below OSHAs and WHMIS' 1.0% w/w (0.1% for carcinogens) or EU's ingredient specific concentrations required for reporting in Section 3.

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Section 16 Other Information

Beckman Coulter Safety Rating	Flammability: 0 Health: 3 Reactivity with Water: 0 Contact: 3	Code 0=None 1=Slight 2=Caution 3=Severe
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Revision Changes

Updated to GHS.

Hazard Class, hazard statements and risk phrase description from section 3

C - Corrosive
N - Dangerous for the environment
Xn - Harmful
R22 Harmful if swallowed.
R36/37/38 Irritating to eyes, respiratory system and skin.
R36/38 Irritating to eyes and skin.
R31 Contact with acids liberates toxic gas.
R34 Causes burns.
R35 Causes severe burns.
R50 Very toxic to aquatic organisms.
Aquatic Acute 1 - Aquatic Hazard Acute, Category 1
Acute Tox. Inhal. 5 - Acute Toxicity Inhalation, Category 5
Acute Tox. Oral 4 - Acute Toxicity Oral, Category 4
Eye Dam. 1 - Eye Damage Category 1
Eye Irrit. 2 - Eye Irritation Category 2
Skin Corr. 1A - Skin Corrosion Category 1A
Skin Corr. 1B - Skin Corrosion Category 1B
Skin Irrit. 2 - Skin Irritation Category 2
STOT SE 3 - Specific Target Organ Toxicity Single Exposure Category 3
H302 - Harmful if swallowed.
H314 - Causes severe skin burns and eye damage.
H315 - Causes skin irritation.
H318 - Causes serious eye damage.
H319 - Causes serious eye irritation.
H333 - May be harmful if inhaled
H335 - May cause respiratory irritation.
H400 - Very toxic to aquatic life.

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Section 16 Other Information (Continued)

Abbreviations and Acronyms

ACGIH - American Conference of Governmental Industrial Hygienists
ADR - European Agreement Concerning The International Carriage Of Dangerous Goods By Road
CERCLA - The Comprehensive Environmental Response, Compensation, and Liability Act
CLP - Classification, Labeling and Packaging
DFGMAK - Republic Germany's maximum exposure limit
GHS - Globally Harmonized System
HCS - Hazard Communication Standard
IARC - International Agency for Research on Cancer
IATA - International Air Transport Association
ICAO - International Civil Aviation Organization
IMDG - International Maritime Dangerous Goods
IOELVs - European Unions' Indicative Occupational Exposure Limit Values
NIOSH - National Institute for Occupational Safety and Health
NTP - National Toxicology Program
OSHA - Occupational Safety and Health Administration
PBT - Persistent bioaccumulative and toxic substances
SARA - Superfund Amendments and Reauthorization Act
TDG - Canadian Transportation Of Dangerous Goods Regulations.
UN GHS - United Nations Globally Harmonized System
US DOT - United States Department of Transportation
WHMIS - Workplace Hazardous Material Information System
vPvB - Very persistent and very bioaccumulative substances
LD50 - Lethal Dose, 50%
LC50 - Lethal Concentration, 50%
EC50 - Effective Concentration, 50%

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Section 1 Identification of the Substance/mixture and of the Company/undertaking

1.1 Product Identifier

Product Name Molybdate Solution (Compartment B)
Part Number Component of P/N A09426
Series Name SYNCHRON Systems

1.2 Relevant identified uses of the substance or mixture and uses advised against

Product Use For In Vitro Diagnostic Use. See product literature for details.

1.3 Details of the supplier of the safety data sheet

Manufacturer

Beckman Coulter, Inc.
250 S. Kraemer Blvd
Brea, CA 92821, U.S.A.
Tel: 800-854-3633

EC REP Address

Beckman Coulter Eurocenter S.A.
22, rue Juste-Oliver, Case Postale 1044,
CH-1260 Nyon 1, Switzerland.
Telephone +41 (0)22 365 36 11
Monday through Friday, 9:00 am to 7:00pm)

e-mail address SDSNT@beckman.com

1.4 Emergency telephone number

Telephone number (24H) Chemtrec Emergency Tel No. U.S.A. 800-424-9300, International (001) 703-527-3887

Distributor and Emergency Phone No.

Refer to attached list, Document ID: [472050](#), for local distributor and emergency phone numbers.

Section 2 Hazards Identification

2.1 Classification of substance or mixture

Product Description Mixture
Colorless; Transparent; Liquid; Odorless

Classification according to EC 1272/2008 (CLP/GHS)

Skin Corrosion Category 1
Eye Damage Category 1

Classification according to EC Directives 1999/45/EC and 67/548/EEC

C;R35

Classification according to US-OSHA (HCS 29 CFR 1910.1200) and UN GHS

Skin Corrosion Category 1
Eye Damage Category 1

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Section 2 Hazards Identification (Continued)

2.2 Label Elements

According to EC 1272/2008 (CLP/GHS), US-OSHA and UN GHS

Hazardous Ingredients

Sulfuric Acid

Ammonium Para-Molybdate Tetrahydrate

Pictogram



Signal Word

DANGER

Hazard Statements

H314 Causes severe skin burns and eye damage.

Precautionary Statements

P280 Wear protective gloves, protective clothing and eye/face protection.

P301+P330+P331 IF SWALLOWED: rinse mouth. Do NOT induce vomiting.

P303+P361+P353 IF ON SKIN (or hair): Rinse skin with water.

P304+P340 IF INHALED: Remove person to fresh air and keep at rest in a position comfortable for breathing.

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 or doctor/physician.

P363 Wash contaminated clothing before reuse.

P405 Store locked up.

P501 Dispose of contents/container in accordance with local/national regulations
Product label will display most significant precautionary statements.

2.3 Other hazards

Results of PBT and vPvB assessment

PBT: Not applicable.

vPvB: Not applicable.

See Section 11 Toxicological Information for more detailed health information.

Section 3 Composition and Information on Ingredients

3.2 Mixtures

Hazardous Ingredients:		Hazard Classification of Pure Ingredients			
Chemical Name	% by wt.	EU-67/548/EEC	EU 1272/2008 CLP/GHS	GHS	
Sulfuric Acid CAS # 7664-93-9 EINECS # 231-639-5 Index # 016-020-00-8	1 - 10	C;R35	Eye Dam. 1 Skin Corr. 1A H314; H318	Eye Dam. 1 Skin Corr. 1A H314; H318	

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Section 3 Composition and Information on Ingredients (Continued)

Ammonium Para-Molybdate Tetrahydrate CAS # 12054-85-2 EINECS # 234-722-4 Index # Not available	1 - 10	Xn;R21/22	Eye Irrit. 2A STOT SE 3 Skin Irrit. 2 H315; H319; H335	Eye Irrit. 2A STOT SE 3 Skin Irrit. 2 H315; H319; H335	
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See section 8 for available Occupational exposure limits

See Section 15 for additional regulatory information

See Section 16 for hazard class, hazard statements and risk phrase description

Section 4 First Aid Measures

4.1 Description of first aid measures

Inhalation	If product is inhaled, move exposed individual to fresh air. If individual is not breathing, begin artificial respiration immediately and obtain medical attention.
Eye Contact	If product enters eyes, wash eyes gently under running water for 15 minutes or longer, making sure that the eyelids are held open and obtain medical attention immediately.
Skin Contact	In case of skin contact, flush with copious amounts of water for at least 15 minutes. If pain or irritation occur, obtain medical attention.
Ingestion	If ingested, wash mouth out with water. If irritation or discomfort occurs, seek medical attention.

4.2 Most important symptoms and effects, both acute and delayed

Corrosive. May cause burns to eyes, skin and respiratory tract.
See Section 11 Toxicological Information for more detailed health information.

4.3 Indication of any immediate medical attention and special treatment needed

If eye irritation persists: Get medical advice/attention.

Section 5 Fire Fighting Measures

Flammable Properties Nonflammable aqueous solution.

5.1 Extinguishing Media In case of fire use carbon dioxide (CO₂), dry chemical, water spray or foam.
For large fires use extinguishing media suitable for surrounding fire.

5.2 Special hazards arising from the substance or mixture

Special Fire and Explosion Hazards

No special hazards determined.

Hazardous Combustion Products

No combustion products posing significant hazards are expected from this product (an aqueous solution).

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Section 5 Fire Fighting Measures (Continued)

5.3 Advice for fire fighters

Protective Equipment

Self-contained breathing apparatus is recommended for firefighters in all chemical fire situations.

5.4 Additional information

No further relevant information available.

Section 6 Accidental Release Measures

6.1 Personal precautions, protective equipment and emergency procedures

Personal Precautions

Observe general safety guidelines for protection; avoid eye and skin contact.
Wear protective gloves, protective clothing and tightly sealed eye/face protection.

6.2 Environmental Precautions

Contain spill to prevent migration.
Do not allow the undiluted product to enter sewers/surface or ground water.

6.3 Methods and material for containment and cleaning up

Spill and Leak Procedures

Absorb spilled material with an appropriate inert, non-flammable absorbent and dispose according to local regulations.

6.4 Reference to other sections

Refer sections 8 and 13.

Section 7 Handling and Storage

7.1 Precautions for safe handling

Use good laboratory procedures; avoid eye and skin contact.

7.2 Conditions for safe storage, including any incompatibilities

Store at 2 to 26°C , as directed on the product label. Keep container closed.
To maintain product quality, store according to the instructions in the product labeling.
Store away from strong acids, strong bases, strong oxidizers and incompatible materials (section 10).

7.3 Specific end uses

No further relevant information available.

Section 8 Exposure Controls and Personal Protection

8.1 Control parameters

Exposure Limits

US OSHA

Sulfuric Acid
CAS # 7664-93-9

1 mg/m3 TWA

ACGIH

Sulfuric Acid
CAS # 7664-93-9

0.2 mg/m3 TWA (thoracic fraction)

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Section 8 Exposure Controls and Personal Protection (Continued)

DFG MAK

Sulfuric Acid
CAS # 7664-93-9

0.1 mg/m³ Peak (inhalable fraction); 0.1 mg/m³ TWA MAK (inhalable fraction)

Ireland

Sulfuric Acid
CAS # 7664-93-9

1 mg/m³ TWA

IOELVs

Sulfuric Acid
CAS # 7664-93-9

0.05 mg/m³ TWA

NIOSH

Sulfuric Acid
CAS # 7664-93-9

15 mg/m³ IDLH; 1 mg/m³ TWA

Japan

None established

8.2 Exposure controls

Engineering Controls

No special engineering controls are required. Use with good general ventilation.

Eye Protection

Safety glasses or chemical goggles should be worn to prevent eye contact.
Refer U.S. OSHA 29 CFR 1910.133, European Standard EN166 or appropriate government standards.

Skin Protection

Impervious gloves, such as Nitrile or equivalent, should be worn to prevent skin contact.
Refer U.S. OSHA 29 CFR 1910.138, European Standard EN374 or appropriate government standards.

Respiratory Protection

Under normal conditions, the use of this product should not require respiratory protection. If overexposure should occur and ventilation is not adequate to maintain airborne concentrations at acceptable levels, the use of respiratory protection should be evaluated by a qualified professional.

Section 9 Physical and Chemical Properties

9.1 Information on basic physical and chemical properties

Physical State	Liquid	Specific Gravity (Water=1.0)	≈ 1.09 @22-26°C
Color	Colorless	Solubility	
Transparency	Transparent	Water	Miscible
Odor	Odorless	Organic	Not determined
pH	1	Partition coefficient: n-octanol/water	Not determined
Freezing Point	Not determined	Auto-ignition Temp.	Not applicable

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Section 9 Physical and Chemical Properties (Continued)

Boiling Point	Not determined	Decomposition Temperature	Not determined
Flash Point	Not applicable	Percent Volatiles	Not applicable
Evaporation Rate	Not determined	Vapor Pressure	Not determined
Flammability (Solid, Gas)	Not applicable	Viscosity	Not determined
Flammability Limits	Not applicable	Explosive Properties	Not applicable
Vapor Density	Not determined	Oxidizing Properties	Not applicable
Odor Threshold	Sulfuric Acid no geometric mean air odor threshold		
9.2 Other Information	No further relevant information available.		

Section 10 Stability and Reactivity

10.1 Reactivity	No further relevant information available.
10.2 Chemical Stability	The product is stable in accordance with recommended storage conditions.
10.3 Possibility of hazardous reactions	No further relevant information available.
10.4 Conditions to Avoid	To maintain product performance keep away from strong acids, strong bases, strong oxidizers. Avoid exposure to heat and direct sunlight.
10.5 Incompatible materials	No further relevant information available.
10.6 Hazardous Decomposition Products	No decomposition products posing significant hazards would be expected from this product (an aqueous solution).

Section 11 Toxicological Information

11.1 Information on toxicological effects	
Toxicity Data for Hazardous Ingredients	
Sulfuric Acid CAS # 7664-93-9	Inhalation LC50 Mouse 320 mg/m ³ 2 h; Inhalation LC50 Rat 510 mg/m ³ 2 h; Inhalation LC50 Rat 347 ppm 1 h; Oral LD50 Rat 2140 mg/kg
Primary Routes of Exposure	Eye contact, ingestion, inhalation, and skin contact.
Skin Corrosion/Irritation	Contact may cause severe skin burns.
Serious eye damage/eye irritation	Contact may cause serious eye damage.
Respiratory/skin sensitization	No data available.

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Section 11 Toxicological Information (Continued)

Carcinogenicity	Sulfuric Acid is listed with OSHA as a carcinogen; IARC as Group 1 carcinogen to humans; ACGIH as A2 Suspected Human Carcinogen.
Germ cell mutagenicity	No data available.
Reproductive Toxicity	No data available.
Specific target organ toxicity – single exposure	No data available.
Specific target organ toxicity – repeated exposure	No data available.
Aspiration hazard	No data available.
Other Information	No further relevant information available.

Section 12 Ecological Information

12.1 Ecotoxicity	
Fresh Water Species	
Sulfuric Acid CAS # 7664-93-9	96 h LC50 Brachydanio rerio: >500 mg/L [static]
Microtox	No information available.
Water Flea	
Sulfuric Acid CAS # 7664-93-9	24 h EC50 Daphnia magna: 29 mg/L
Fresh Water Algae	No information available.
12.2 Persistence and degradability	Not determined for the product.
12.3 Bioaccumulation	Not determined for the product.
12.4 Mobility in soil	Not determined for the product.
12.5 Results of PBT and vPvB assessment	Not determined for the product. PBT: Not applicable, vPvB: Not applicable.
12.6 Other Adverse Effects	No further relevant information available.

Section 13 Disposal Considerations

13.1 Waste treatment methods	
Product Waste Disposal	Chemical residues and remains should be routinely handled as special waste. This must be disposed of in compliance with anti-pollution and other laws of the country concerned. To ensure compliance we recommend that you contact the relevant (local) authorities and/or an approved waste-disposal company for information.

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Package disposal

Dispose of waste product, unused product and contaminated packaging in compliance with federal, state and local regulations. If unsure of the applicable requirements, contact the authorities for information.

13.2 Additional information

Suggested European waste catalogue 18 01 06* - chemicals consisting of or containing dangerous substances. Dispose in accordance with national, state and local waste regulations.

Section 14 Transport Information

Shipping Information	IATA	IMDG	US DOT	European ADR	Canadian TDG
14.1 UN/ID Number	2796	2796	2796	2796	PIN - 2796
14.2 Shipping Name	Sulfuric acid solution				
14.3 Hazard Class	8 Corrosives	8 Corrosive substances	8 Corrosive material	8 Corrosive substances	8 Corrosives
Subsidiary Risk	None	None	None	None	None
Classification Code	Not applicable	Not applicable	Not applicable	C1	Not applicable
14.4 Packing Group	II	II	II	II	II
Special Provisions	None	None	A3	None	None
Additional information					
IATA ERG Code	8L	Not applicable	Not applicable	Not applicable	Not applicable
EmS	Not applicable	F-A; S-B	Not applicable	Not applicable	Not applicable
NAERG Code	Not applicable	Not applicable	157	Not applicable	157
14.5 Environmental Hazards					
Marine Pollutant	Not applicable	No	Not applicable	Not applicable	Not applicable
14.6 Special Precautions for user	Warning: Corrosive substances.				
14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code	Not applicable				

Section 15 Regulatory Information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture US Federal and State Regulations

SARA 313

Sulfuric Acid is subject to reporting requirements of Section 313, Title III of SARA.
1.0 % de minimis concentration (acid

Section 15 Regulatory Information (Continued)

CERCLA RG's, 40 CFR 302.4 Sulfuric Acid is listed.

California Proposition 65 Sulfuric Acid has been identified by the State of California to cause cancer. The State of California has adopted a regulation which requires a warning be given to individual who may be exposed to chemicals identified by the State to cause cancer or reproductive harm. Accordingly, Beckman Coulter advises you of the following warning:
WARNING: This product contains a chemical known to the State of California to cause cancer.

Massachusetts MSL Sulfuric Acid is listed.

New Jersey Dept. of Health RTK List

Sulfuric Acid is listed.

Pennsylvania RTK Sulfuric Acid is listed.

EU Regulations

This SDS complies with EC Regulations 1907/2006 (REACH) and amendments.

Water Hazard Class (Germany) WGK 2, water endangering

REACH 1907/2006 EC - Annex XIV - list of substances subject to authorization.

No ingredients listed.

According to EC Directives (1999/45/EC and 67/548 EEC)

Corrosive

C



Risk and Safety Phrases

R35 Causes severe burns.

S26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

S45 In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

Canada

This product is exempt from WHMIS label and SDS requirements.

PIN 2796

Ingredients on Ingredient Disclosure List

Sulfuric Acid

Ingredients with unknown toxicological properties

Product is exempt

15.2 Chemical Safety Assessment A Chemical Safety Assessment has not been carried out.

Some hazardous ingredients listed in Section 15 are below OSHAs and WHMIS' 1.0% w/w (0.1% for carcinogens) or EU's ingredient specific concentrations required for reporting in Section 3.

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Section 16 Other Information

Beckman Coulter Safety Rating	Flammability: 0 Health: 3 Reactivity with Water: 0 Contact: 3	Code 0=None 1=Slight 2=Caution 3=Severe
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Revision Changes

Updated to GHS.

Hazard Class, hazard statements and risk phrase description from section 3

C - Corrosive
Xn - Harmful
R21/22 Harmful in contact with skin and if swallowed.
R35 Causes severe burns.
Eye Dam. 1 - Eye Damage Category 1
Eye Irrit. 2A - Eye Irritation Category 2A
Skin Corr. 1A - Skin Corrosion Category 1A
Skin Irrit. 2 - Skin Irritation Category 2
STOT SE 3 - Specific Target Organ Toxicity Single Exposure Category 3
H314 - Causes severe skin burns and eye damage.
H315 - Causes skin irritation.
H318 - Causes serious eye damage.
H319 - Causes serious eye irritation.
H335 - May cause respiratory irritation.

Abbreviations and Acronyms

ACGIH - American Conference of Governmental Industrial Hygienists
ADR - European Agreement Concerning The International Carriage Of Dangerous Goods By Road
CERCLA - The Comprehensive Environmental Response, Compensation, and Liability Act
CLP - Classification, Labeling and Packaging
DFGMAK - Republic Germany's maximum exposure limit
GHS - Globally Harmonized System
HCS - Hazard Communication Standard
IARC - International Agency for Research on Cancer
IATA - International Air Transport Association
ICAO - International Civil Aviation Organization
IMDG - International Maritime Dangerous Goods
IOELVs - European Unions' Indicative Occupational Exposure Limit Values
NIOSH - National Institute for Occupational Safety and Health
NTP - National Toxicology Program
OSHA - Occupational Safety and Health Administration
PBT - Persistent bioaccumulative and toxic substances
SARA - Superfund Amendments and Reauthorization Act
TDG - Canadian Transportation Of Dangerous Goods Regulations.
UN GHS - United Nations Globally Harmonized System
US DOT - United States Department of Transportation

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Section 16 Other Information (Continued)

WHMIS - Workplace Hazardous Material Information System

vPvB - Very persistent and very bioaccumulative substances

LD50 - Lethal Dose, 50%

LC50 - Lethal Concentration, 50%

EC50 - Effective Concentration, 50%

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