Material Safety Data Sheet

MARKIT-M H-FABP

DS Pharma Biomedical Co., Ltd
2-8 Doshomachi 2-chome, Chuo-ku, Osaka 541-0045, JAPAN
TEL +81-6-6229-5645
FAX +81-6-6228-6070

Hazards identified with this product are those associated with the following components. Refer to the material safety data sheets for the listed items.

Component name:

Substrate tablet
Stop reagent

Multiple component spill or leak procedures

Steps to be taken if material is released or spilled

Evacuate
Wear self-contained breathing apparatus, chemical safety goggles, rubber boots and heavy rubber gloves.
Sweep up, place in a bag and hold for waste disposal. Avoid raising dust.
Ventilate area and wash spill site after material pickup is complete.

Waste disposal method

Contact a licensed professional waste disposal service to dispose of this material.
Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber.
Observe all federal, state and local environmental regulations.

Label precautionary statements

Harmful by inhalation and in contact with skin.
Toxic if swallowed.
Irritating to eyes.
Limited evidence of carcinogenic effect.
May cause sensitization by skin contact.
Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
Possible risk of irreversible effects.
If inhaled, remove to fresh air. If not breathing give artificial respiration. If breathing is difficult, give oxygen.
In case of skin contact, flush with copious of water for at least 15 minutes.
Remove contaminated clothing and shoes. Call a physician.
In case of contact with eyes, flush with copious amounts of water for at least 15 minutes.
Assure adequate flushing by separating the eyelids with fingers. Call a physician.
If swallowed, wash out mouth with water provided person is conscious. Call a physician immediately.

Other information

The above information is believed to be correct but does not purport to be all inclusive and shall be used only as guide. DS Pharma Biomedical shall not be held liable for any damage resulting from handling or from contact with the above product,

Material Safety Data Sheet

Substrate tablet

Section 1 - Chemical Product

MSDS Name: Substrate tablet

Synonyms: OPD tablet

Section 2 - Composition, Information on Ingredients

CAS#	Chemical Name	Percent	EINECS/ELINCS
95-54-5	o-Phenylenediamine	5-10	202-430-6
7757-79-1	Potassium nitrate		231-818-8

Section 3 - Hazards Identification

EMERGENCY OVERVIEW

Appearance: Not available.

Danger! Strong oxidizer. Contact with other material may cause a fire. May cause allergic skin reaction. Material should be stored at 2 ~8 ℃.

Target Organs: Liver, skin, bladder.

Potential Health Effects

Eye: May cause eye irritation.

Skin: May cause skin sensitization, an allergic reaction, which becomes evident upon re-exposure to this material. If absorbed, causes symptoms similar to those of ingestion.

Ingestion: Harmful if swallowed. Ingestion of large amounts may cause gastrointestinal irritation.

Inhalation: Harmful if inhaled.

Chronic: May cause liver and kidney damage. Repeated exposure may cause central nervous system damage. Repeated exposure may cause damage to the spleen.

Section 4 - First Aid Measures

Eyes: Flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical aid.
Skin: Get medical aid. Flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes.
Ingestion: Get medical aid. Wash mouth out with water.
Inhalation: Remove from exposure and move to fresh air immediately. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical aid.
Notes to Physician: Treat symptomatically and supportively.

Section 5 - Fire Fighting Measures

General Information: As in any fire, wear a self-contained breathing apparatus in pressure-demand, MSHA/NIOSH (approved or equivalent), and full protective gear. Oxidizer. Greatly increases the burning rate of combustible materials.
Extinguishing Media: Use water spray, dry chemical, carbon dioxide, or chemical foam.
Flash Point: Not applicable.
Autoignition Temperature: Not available.
Explosion Limits, Lower: Not available.
Upper: Not available.
NFPA Rating: (estimated) Health: ; Flammability: 1; Instability:; Special Hazard: OX

Section 6 - Accidental Release Measures

General Information: Use proper personal protective equipment as indicated in Section 8.
Spills/Leaks: Vacuum or sweep up material and place into a suitable disposal container. Keep combustibles (wood, paper, oil, etc.,) away from spilled material.

Section 7 - Handling and Storage

Handling: Wash thoroughly after handling. Remove contaminated clothing and wash before reuse. Use with adequate ventilation. Avoid contact with eyes, skin, and clothing. Avoid breathing dust.
Storage: Do not store near combustible materials. Store in a cool, dry place. Store in a tightly closed container. Deep freeze (below -20 − C).

Section 8 - Exposure Controls, Personal Protection

Engineering Controls: Use process enclosure, local exhaust ventilation, or other engineering controls to control airborne levels below recommended exposure limits.

Exposure Limits

Chemical Name	ACGIH	NIOSH	OSHA - Final PELs
o-Phenylenediamine	0.1 mg/m3 TWA	none listed	none listed
Potassium nitrate	none listed	none listed	none listed

OSHA Vacated PELs: o-Phenylenediamine: No OSHA Vacated PELs are listed for this chemical. Potassium nitrate: No OSHA Vacated PELs are listed for this chemical.

Personal Protective Equipment

Eyes: Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166.

Skin: Wear appropriate protective gloves to prevent skin exposure.

Clothing: Wear appropriate protective clothing to prevent skin exposure.

Respirators: Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.

Section 9 - Physical and Chemical Properties

Physical State: Tablets

Appearance: Not available.

Odor: Not available.

pH: Not available.

Vapor Pressure: Not available.

Vapor Density: Not available.

Evaporation Rate: Not available.

Viscosity: Not available.

Boiling Point: Not available.

Freezing/Melting Point: Not available.

Decomposition Temperature: Not available.

Solubility: soluble in water

Specific Gravity/Density: Not available.

Molecular Formula:mixture

Molecular Weight: Not available.

Section 10 - Stability and Reactivity

Chemical Stability: Stable under normal temperatures and pressures.

Conditions to Avoid: Dust generation, excess heat.

Incompatibilities with Other Materials: Strong reducing agents, combustible materials, easily oxidizable materials.

Hazardous Decomposition Products: Oxides of nitrogen, oxides of carbon, oxides of potassium.

Hazardous Polymerization: Has not been reported

Section 11 - Toxicological Information

RTECS#:

CAS# 95-54-5: SS7875000

CAS# 7757-79-1: TT3700000

LD50/LC50:

CAS# 95-54-5:

Inhalation, mouse: LC50 = >91 mg/m3/4H;

Inhalation, rat: LC50 = 1873 mg/m3;

Oral, mouse: LD50 = 366 mg/kg;

Oral, rat: LD50 = 510 mg/kg;

Skin, rat: LD50 = >5 gm/kg;

.

CAS# 7757-79-1:

Oral, rabbit: LD50 = 1901 mg/kg;

Oral, rat: LD50 = 3750 mg/kg;

Oral, rat: LD50 = 3540 mg/kg;

.

Carcinogenicity:

CAS# 95-54-5:

- **ACGIH:** A3 - Confirmed animal carcinogen with unknown relevance to humans
- **California:** carcinogen, initial date 5/15/98
- **NTP:** Not listed.
- **IARC:** Not listed.

CAS# 7757-79-1: Not listed by ACGIH, IARC, NTP, or CA Prop 65.

Epidemiology: No data available.

Teratogenicity: No data available.

Reproductive Effects: No data available.

Mutagenicity: No data available.

Neurotoxicity: No data available.

Other Studies:

Section 12 - Ecological Information

No information available.

Section 13 - Disposal Considerations

Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. US EPA guidelines for the classification determination are listed in 40 CFR Parts 261.3. Additionally, waste generators must consult state and local hazardous waste regulations to ensure complete and accurate classification.

RCRA P-Series: None listed.

RCRA U-Series: None listed.

Section 14 - Transport Information

	US DOT	Canada TDG
Shipping Name:	DOT regulated - small quantity provisions apply (see 49CFR173.4)	No information available.
Hazard Class:		
UN Number:		
Packing Group:		

Section 15 - Regulatory Information

US FEDERAL

TSCA

CAS# 95-54-5 is listed on the TSCA inventory.

CAS# 7757-79-1 is listed on the TSCA inventory.

Health & Safety Reporting List

None of the chemicals are on the Health & Safety Reporting List.

Chemical Test Rules

None of the chemicals in this product are under a Chemical Test Rule.

Section 12b

None of the chemicals are listed under TSCA Section 12b.

TSCA Significant New Use Rule

None of the chemicals in this material have a SNUR under TSCA.

CERCLA Hazardous Substances and corresponding RQs

None of the chemicals in this material have an RQ.

SARA Section 302 Extremely Hazardous Substances

None of the chemicals in this product have a TPQ.

SARA Codes

CAS # 95-54-5: immediate.

CAS # 7757-79-1: immediate, delayed, fire.

Section 313

This material contains o-Phenylenediamine(CAS#95-54-5,5-10%),which is subject to the reporting requirements of.

Section 313 of SARA Title Ⅲand 40 CFR.

This material contains Potassium nitrate (listed as Water Dissociable Nitrate Compounds), %, (CAS# 7757-79-1) which is subject to the reporting requirements of Section 313 of SARA Title III and 40 CFR Part 373.

Clean Air Act:

This material does not contain any hazardous air pollutants.

This material does not contain any Class 1 Ozone depletors.

This material does not contain any Class 2 Ozone depletors.

Clean Water Act:

None of the chemicals in this product are listed as Hazardous Substances under the CWA.

None of the chemicals in this product are listed as Priority Pollutants under the CWA.

None of the chemicals in this product are listed as Toxic Pollutants under the CWA.

OSHA:

None of the chemicals in this product are considered highly hazardous by OSHA.

STATE

CAS# 95-54-5 can be found on the following state right to know lists: New Jersey, Minnesota, Massachusetts.

CAS# 7757-79-1 can be found on the following state right to know lists: New Jersey, Pennsylvania, Massachusetts.

California Prop 65

The following statement(s) is(are) made in order to comply with the California Safe Drinking Water Act:

WARNING: This product contains o-Phenylenediamine, a chemical known to the state of California to cause cancer.

California No Significant Risk Level: CAS# 95-54-5:

European/International Regulations

European Labeling in Accordance with EC Directives

Hazard Symbols:

T O N

Risk Phrases:

R 23/24/25 Toxic by inhalation, in contact with skin and if swallowed.

R 43 May cause sensitization by skin contact.

R 8 Contact with combustible material may cause fire.

R 50/53 Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Safety Phrases:

S 17 Keep away from combustible material.

S 36/37 Wear suitable protective clothing and gloves.

S 45 In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

S 60 This material and its container must be disposed of as hazardou s waste.

S 28A After contact with skin, wash immediately with plenty of water

S 61 Avoid release to the environment. Refer to special instructions /safety data sheets.

WGK (Water Danger/Protection)

CAS# 95-54-5: 3

CAS# 7757-79-1: 1

Canada - DSL/NDSL

CAS# 95-54-5 is listed on Canada's DSL List.

CAS# 7757-79-1 is listed on Canada's DSL List.

Canada - WHMIS

This product has a WHMIS classification of C, D2B.

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all of the information required by those regulations.

Canadian Ingredient Disclosure List

CAS# 95-54-5 is listed on the Canadian Ingredient Disclosure List.

CAS# 7757-79-1 is not listed on the Canadian Ingredient Disclosure List.

Section 16 - Additional Information

MSDS Creation Date: 9/17/1998

Revision #4 Date: 7/11/2007

The information above is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes. In no event shall Fisher be liable for any claims, losses, or damages of any third party or for lost profits or any special, indirect, incidental, consequential or exemplary damages, howsoever arising, even if Fisher has been advised of the possibility of such damages.

Material Safety Data Sheet

Stop reagent

Section 1 - Chemical Product

MSDS Name: Stop reagent

Synonyms: Sulfuric acid solution

Section 2 - Composition, Information on Ingredients

CAS#	Chemical Name	Percent	EINECS/ELINCS
7664-93-9	Sulfuric acid	5	

Toxicological Data on Ingredients: Sulfuric acid: ORAL(LD50):Acute:2140mg/kg[Rat].VAPOR(LC50):Acute:510mg/m2 hours[Rat].320mg/m2hours[Mouse]

Section 3 - Hazards Identification

EMERGENCY OVERVIEW

Potential Acute Health Effects: Very hazardous in case of skin contact(irritant), of eye contact(irritant), of ingestion. Hazardous in case of skin contact(corrosive, permeator), of eye contact(corrosive). Slightly hazardous in case of inhalation(lung sensitizer). Non-corrosive for lungs. Liquid or spray mist may produce tissue damage particularly on mucous membranes of eyes, mouth and respiratory tract. Skin contact may produce burns. Inhalation of the spray mist may produce severe irritation of respiratory tract, characterized by coughing, choking, or shortness of breath. Severe over-exposure can result in death. Inflammation of the eye is characterized by redness, watering, and itching. Skin inflammation is characterized by itching, scaling, reddening, or, occasionally, blistering.

Potential Chronic Health Effects: CARCINOGENIC EFFECTS: Classified 1(Proven for human.) by IARC,+(Proven.) by OSHA[Sulfuric acid].Classified A2(Suspected for human.) by ACGIH[Sulfuric acid].
MUTAGENIC EFFECTS: Not available.
TERATOGENIC EFFECTS: Not available.
DEVELOPMENTAL TOXICITY: Classified Reproductive system/toxin/female, Reproductive system/toxin/male[SUSPECTED][Sulfuric acid].
The substance may be toxic to teeth.

Repeated or prolonged exposure to the substance can produce target organs damage. Repeated or prolonged contact with spray mist may produce chronic eye irritation and severe skin irritation. Repeated or prolonged exposure to spray mist may produce respiratory tract irritation leading to frequent attacks of bronchial infection. Repeated exposure to a highly toxic material may produce general deterioration of health by an accumulation in one or many human organs.

Section 4 - First Aid Measures

Eyes: Check for and remove any contact lenses. Flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical aid.

Skin: Get medical aid. Flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes.

Ingestion: Get medical aid. Wash mouth out with water.

Inhalation: Remove from exposure and move to fresh air immediately. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical aid.

Notes to Physician: Treat symptomatically and supportively.

Section 5 - Fire Fighting Measures

General Information: As in any fire, wear a self-contained breathing apparatus in pressure-demand, MSHA/NIOSH (approved or equivalent), and full protective gear. Oxidizer. Greatly increases the burning rate of combustible materials.

Flammability of the product: Non-flammable.

Autoignition Temperature: Not available.

Explosion Limits, Lower: Not available.

Upper: Not available.

Flash Point: Not applicable.

Autoignition Temperature: Not available.

Explosion Limits, Lower: Not available.

NFPA Rating: (estimated) Health: ; Flammability: 1; Instability:; Special Hazard: OX

Special Remarks on Explosion Hazards: Mixtures of sulfuric acid and any of the following can explode: p-nitrotoluene, pentasilver trihydroxydiaminophosphate, perchlorates, alcohols with strong hydrogen peroxide, ammonium tetraperoxychromate, mercuric nitrite, potassium chlorate, potassium permanganate with potassium chloride.

Nitramide decomposes explosively on contact with concentrated sulfuric acid.

1,3,5-Trinitrosohexahydro-1,3,5-triazide + sulfuric acid cause explosive decomposition.(Sulfuric acid)

Section 6 - Accidental Release Measures

General Information: Use proper personal protective equipment as indicated in Section 8.

Small Spill: Dilute with water and mop up, or absorb with an inert dry material and place in an appropriate waste disposal container. If necessary: Neutralize the residue with a dilute solution of sodium carbonate.

Large Spill: Corrosive liquid. Poisonous liquid. Stop leak if without risk. Absorb with DRY earth, sand or other non-combustible material. Do not get water inside container. Do not touch spilled material. Use water apray curtain to divert vapor drift. Use water spray to reduce vapors. Prevent entry into sewers, basements or confined areas; dike if needed. Call for assistance on disposal. Neutralize the residue with a dilute solution of sodium carbonate. Be careful that the product is not present at a concentration level above TLV. Check TLV on the MSDS and with local authorities.

Section 7 - Handling and Storage

Handling: Keep locked up. Keep container dry. Do not ingest. Do not breathe gas/fumes/vapor/spray. Never add water to this product. Incase of insufficient ventilation, wear suitable respiratory equipment. If ingested, seek medical advice immediately and show the container or the label. Avoid contact with skin and eyes. Keep away from incompatible such as oxidizing agents, combustible materials, organic materials, metals, alkalis. May corrode metallic surfaces. Store in a metallic or coated fiberboard drum using a strong polyethylene inner package.

Storage: Do not store near combustible materials. Store in a cool, dry place. Store in a tightly closed container. Do not store above 23℃.

Section 8 - Exposure Controls, Personal Protection

Engineering Controls: Use process enclosure, local exhaust ventilation, or other engineering controls to control airborne levels below recommended exposure limits.

Personal Protective Equipment

Eyes: Wear appropriate protective eyeglasses or chemical safety goggles.

Skin: Wear appropriate protective gloves to prevent skin exposure.

Clothing: Wear appropriate protective clothing to prevent skin exposure.

Exposure Limits:Sulfuric acid.

TWA:1STEL:3(mg/m3)[Australia] Inhalation

TWA1:(mg/m3)from OSHA(PEL)[United States] Inhalation

TWA:1STEL:3(mg/m3)from ACGIH(TLV)[United States] [1999]Inhalation

TWA1:(mg/m3)from NIOSH[United States] Inhalation

TWA1:(mg/m3)[United Kingdom(UK)] 3

Section 9 - Physical and Chemical Properties

Physical State: Liquid

Appearance: Not available.

Odor: Odorless

Taste: Not available

Molecular Weight: Not applicable

Color: Odorless

pH(1% soln/water): Acidic

Boiling Point: The lowest kown value is 100℃(212° F)(Water). Weight average: 109.5℃(229.1° F)

Melting Point: May start to solidify at 10.36℃(50.6° F)based on data for: Sulfuric acid.

Critical Temperature: Not available.

Specific Gravity/Density: Weight average: 1.02(Water=1)

Vapor Pressure: The highest known value is 2.3kPa(@20℃)(Water)

Vapor Density: The highest known value is 3.4(Air=1)(Sulfuric acid). Weighted average: 0.76(Air=1)

Volatility: Not available.

Odor Threshold: Not available.

Water/Oil Dist. Coeff.: Not available.

Ionicity(in Water): Not available.

Dispersion Properties: See solubility in water.

Solubility: Easily soluble in cold water,hot water.

Section 10 - Stability and Reactivity

Chemical Stability: Stable under normal temperatures and pressures.

Instability Temperature: Not available

Conditions of Instability: Incompatible materials

Incompatibilities with Other Materials: Reactive with oxidizing agents, combustible materials, organic materials, metals, alkalis.

Corrosivity: Extreme corrosive in presence of aluminium, of stainless steel(304)

Slightly corrosive in presence of stainless steel(316)

Non-corrosive in presence of glass.

Special Remarks on Reactivity: May ignite other combustible materials.

Hygroscopic. Strong oxidizer. Reacts violently with water and alcohol especially when is added to the product.
Also Incompatible(can react explosively or dangerously)with the following: strong dehydrating agents, organic materials, moisture, Acetic anhydride, Acetone, cyanohydrin, Acetone+nitric acid, Acetone+potassium dichromate, Acetonitrile, Acrolein, Acrylonitrile, Acrylonitrile＋water, Alcohols+hydrogen peroxide, Allyl alcohol, Allyl chloride, 2-Aminoethanol, Ammonium hydroxide,Ammonium triperchromate, Aniline, Bromate+metals, Bromine pentafluoride, n-Butyraldehyde, Carbides, Cesium acetylene carbide, Chlorates, Chlorated+metals, Chlorine trifluoride, Chlorosulfonic acid, Cuprous nitride, Diisobutylene, Dimethylbenzylcarbinol+hydrogen peroxide, Epichlorohydrin, Ethyl alcohol+hydrogen peroxide, Ethylene diamine, Ethylene glycol, Ethylenimine, Fulminates, Hydrochloric acid, Hydrofluoric acid, Iodine heptafluoride, Indane+nitric acid, Iron, Isoprene, Lithium silicide, Mercuric nitride, Mesityl oxide, Metals(powdered), Nitric acid+glycerides, p-Nitrotoluene, Pentasilver trihydroxydiaminophosphate Perchlorates, Perchloric acid, Permanganates+benzene, 1-Phenyl-2-methylpropyl alcohol+hydrogen peroxide,Phosphorus, Phosphorus isocyanate, Picrates, Potassium tert-butoxide, Potassium chlorate, Potassium Permanganate, Potassium Permanganate+Potassium chloride, Potassium Permanganate+water,Propiolactone(beta)-, Pyridine, Rubidium aceteylene carbide, Silver permanganate, Sodium, Sodium carbonate, Sodium hydroxide, Steel, Styrene monomer, Toluene+nitric acid, Vinyl acetate, Zinc chlorate.(Sulfuric acid)

Special Remarks on Corrosivity: Concentrated acid is non-corrosive to lead and mild steel, but diluted acid attacks most metals. Attacks and corrodes many metals releasing hydrogen. Minor corrosive on bronze. No data for copper, zinc or brass.
Hazardous Polymerization: Will not occur.

Section 11 - Toxicological Information

Routes of Entry: Absorbed through skin. Dermal contact. Eye contact. Inhalation.
Toxicity to Animals: Acute oral toxicity(LD50): 42800mg/kg(Rat.)(calculated value for the mixture).
Chronic Effects on Humans:
CARCINOGENIC EFFECTS: Classified 1(Proven for human.) by IARC, +(Proven.) by OSHA[Sulfuric acid].
Classified A2(Suspected for human.) by ACGIH[Sulfuric acid].
DEVELOPMENTAL TOXICITY: Classified Reproductive system/toxin/female, Reproductive system/toxin/male [SUSPECTED][Sulfuric acid].
May cause damage to the following organs: teeth.
Other Toxic Effects on Humans:
Extremely hazardous in case of inhalation(lung corrosive).
Very hazardous in case of skin contact(irritant), of ingestion.
Hazardous in case of skin contact(corrosive, permeator), of eye contact(corrosive).
Special Remarks on Chronic Effects on Humans:
Mutagenicity: Cytogenetic Analysis: Hamster, ovary=4mmol/L
Reproductive effects: May cause adverse reproductive effects based on animal data. Developmental abnormalities(musculoskeletal) in rabbits at a dose of 20mg/m3 for 7 hrs.(RTECS)
Teratogenecity: neither embryotoxic, fetoxic, nor teratogenetic in mice or rabbits at inhaled doses producing some maternal

toxicity(Sulfuric acid)

Special Remarks on other Toxic Effects on Humans:

Acute Potential Health Effects:

Skin: Corrosive. Causes eye irritation and burns. Symptoms include redness, pain, burns, cardiovascular system effects (circulatory collapse with clammy skin, weak and rapid pulse) shallow respirations. May also affect urinary system.

Eye: Corrosive. Causes eye irritation and tissue burns. Can cause blurred vision, redness, pain, and blindness.

Inhalation: Produces damaging effects on the mucous membranes and upper respiratory tract. Symptoms may include irritation of the nose and throat, and laboared breathing. May cause lung edema.

May also affect behavior.

Ingestion: Corrosive. Swallowing can cause irritation and burns of the digestive system (mouth, throat, and stomach) leading to death. Symptoms can include sore throat, vomiting, diarrhea. May also affect the cardiovascular system (circulatory collapse with clammy skin, weak and rapid pulse, shallow respirations, circulatory shock) and urinary system (scanty urine).

Chronic Potential Health Effects:

Long term exposure to mist may cause damage to teeth.

Section 12 - Ecological Information

Ecotoxicity: Not available.

BOD5 and COD: Not available.

Products of Biodegradation: possibly hazardous short term degradation products are not likely. However, long term degradation products may arise.

Toxicity of the Products of Biodegradation: The products of degradation are less toxic than the product itself.

Special Remarks on the Products of Biodegradation: Not available.

Section 13 - Disposal Considerations

Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. US EPA guidelines for the classification determination are listed in 40 CFR Parts 261.3. Additionally, waste generators must consult state and local hazardous waste regulations to ensure complete and accurate classification.

RCRA P-Series: None listed.

RCRA U-Series: None listed.

Section 14 - Transport Information

	US DOT	Canada TDG
Shipping Name:	DOT Classification: Class 8: Corrosive material	No information available.

Identification: Sulfuric Acid, Solution (Sulfuric acid) UNNA: 2796PG: II

Special Provisions for Transport: Not available.

Section 15 - Regulatory Information

US FEDERAL

Chemical Test Rules

Illinois toxic substances disclosure to employee act: Sulfuric acid

New York release reporting list: Sulfuric acid

Rhode Island RTK hazardous substances: Sulfuric acid

Pennsylvania RTK: Sulfuric acid

Minnesota: Sulfuric acid

Massachusetts RTK: Sulfuric acid

New Jersey: Sulfuric acid

TSCA8(b)inventory:

Sulfuric acid; Water

SARA302/304/311/312 extremely hazardous substances:

Sulfuric acid

SARA313 toxic chemical notification and release reporting:

Sulfuric acid 5%

CERCLA:Hazardous substances

Sulfuric acid : 1000lbs.(453.6kg)

Other Regulations:

OSHA: Hazardous by definition of Hazard Communocation Standard(29 CFR 1910.1200).

Other Classifications:

WHMIS(Canada):

CLASS D-1A: Material causing immediate and serious toxic effects(VERY TOXIC).

CLASS D-2A: Material causing other toxic effects(VERY TOXIC).

CLASS E: Corrosive liquid.

DSCL(EEC)

R25-Toxic if swallowed.

R35-Causes severe burns.

S1/2-Keep locked up and out of the reach of children.

S36/37/39- Wear suitable protective clothing, gloves and eye/face protection.

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

HMIS(U.S.A.)

Health Hazard: 3

Fire Hazard: 0

Reactivity: 0

Personal Protection

National Fire Protection Association(U.S.A.)

Health: 2

Flammability: 0

Reactivity: 0

Special hazard

Protective Equipment:

Gloves..

Full suit

Vapor respirator. Be sure to use an approved/certified respirator or equipment.

Wear appropriate respirator when ventilation is inadequate.

Face shield.

Section 16 - Additional Information

References: Not available

Other Special Considerations: Not available

MSDS Creation Date: 7/11/2007

Revision #4 Date: 7/11/2007

The information above is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes. In no event shall Fisher be liable for any claims, losses, or damages of any third party or for lost profits or any special, indirect, incidental, consequential or exemplary damages, howsoever arising, even if Fisher has been advised of the possibility of such damages.