Fisher

**** MATERIAL SAFETY DATA SHEET ****

Iodine
11400

**** SECTION 1 - CHEMICAL PRODUCT AND COMPANY IDENTIFICATION ****

MSDS Name: Iodine
Catalog Numbers:
, S75028, S750282, S75139, I35-100, I35-500, I37-100, I37-500, NC9621796, NC9680460, NC9887523, XXI35100LB, XXI373.3KG, XXI375KG
Synonyms:
None.
Company Identification: Fisher Scientific
1 Reagent Lane
Fairlawn, NJ 07410
For information, call: 201-796-7100
Emergency Number: 201-796-7100
For CHEMTREC assistance, call: 800-424-9300
For International CHEMTREC assistance, call: 703-527-3887

**** SECTION 2 - COMPOSITION, INFORMATION ON INGREDIENTS ****

CAS#	Chemical Name	%	EINECS#
7553-56-2	Iodine	100	231-442-4

Hazard Symbols: XN N
Risk Phrases: 20/21 50

**** SECTION 3 - HAZARDS IDENTIFICATION ****

EMERGENCY OVERVIEW

Appearance: black-violet solid.
Danger! May cause allergic skin reaction. Corrosive. May cause kidney damage. Causes eye and skin burns. May cause severe respiratory and digestive tract irritation with possible burns.
Target Organs: Kidneys, thyroid.

Potential Health Effects

Eye:
Causes severe eye irritation. May cause eye burns. Vapor or mist may cause irritation and severe burns.

Skin:
Causes skin burns. May cause skin sensitization, an allergic reaction, which becomes evident upon re-exposure to this material.

Ingestion:
May cause gastrointestinal irritation with nausea, vomiting and diarrhea. May cause kidney damage. May cause burns to the digestive tract. May cause thyroid abnormalities.

Inhalation:
May cause irritation of the respiratory tract with burning pain in the nose and throat, coughing, wheezing, shortness of breath and pulmonary edema. May cause epiphoria, which is an excessive flow of tears.

Chronic:
Chronic exposure can lead to iodism characterized by salivation, nasal discharge, sneezing, conjunctivitis, fever, laryngitis, bronchitis, stomatitis, and skin rashes. Chronic exposure can affect thyroid function. May cause kidney damage.

**** SECTION 4 - FIRST AID MEASURES ****

Eyes:
Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical aid immediately.

Skin:
Get medical aid immediately. Rinse area with large amounts of water for at least 15 minutes. Remove contaminated clothing and shoes.

Ingestion:
Do NOT induce vomiting. If victim is conscious and alert, give 2-4 cupfuls of milk or water. Never give anything by mouth to an unconscious person. Get medical aid immediately.

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

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. Material will not burn. During a fire, irritating

and highly toxic gases may be generated by thermal decomposition or combustion. Use water spray to keep fire-exposed containers cool. Containers may explode when heated.

Extinguishing Media:
Use extinguishing media most appropriate for the surrounding fire.

Autoignition Temperature:Not applicable.
Flash Point: Not applicable.
Explosion Limits, lower:Not available.
Explosion Limits, upper:Not available.
NFPA Rating: (estimated) Health: 3; Flammability: 0; Instability: 0; Specia

**** 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. Avoid runoff into storm sewers and ditches which lead to waterways. Clean up spills immediately, observing precautions in the Protective Equipment section. Avoid generating dusty conditions. Provide ventilation.

**** SECTION 7 - HANDLING and STORAGE ****

Handling:
Wash thoroughly after handling. Use with adequate ventilation. Minimize dust generation and accumulation. Keep container tightly closed. Avoid contact with clothing and other combustible materials. Do not get on skin or in eyes. Do not ingest or inhale.

Storage:
Do not store near combustible materials. Keep away from food and drinking water. Keep away from strong acids. Keep away from metals. Keep away from reducing agents.

**** 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. Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower.

Exposure Limits

Chemical Name	ACGIH	NIOSH	OSHA - Final PELs
Iodine	0.1 ppm Ceiling	2 ppm IDLH	0.1 ppm Ceiling; 1 mg/m3 Ceiling

OSHA Vacated PELs:
Iodine:
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 impervious gloves.

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. Always use a NIOSH or European Standard EN 149 approved respirator when necessary.

**** SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES ****

Physical State:	Solid
Color:	black-violet
Odor:	iodine-like
pH:	5.4 (sat soln)
Vapor Pressure:	1 mm Hg @ 38.7
Vapor Density:	8.8 (air=1)
Evaporation Rate:	Negligible (n-Butyl Acetate=1)
Viscosity:	Not available.
Boiling Point:	184.35 deg C
Freezing/Melting Point:	113.5 deg C
Decomposition Temperature:	Sublimes
Solubility in water:	Slightly soluble.
Specific Gravity/Density:	4.93
Molecular Formula:	I2
Molecular Weight:	253.81

**** SECTION 10 - STABILITY AND REACTIVITY ****

Chemical Stability:
Stable.
Conditions to Avoid:
Dust generation, excess heat.
Incompatibilities with Other Materials:
Powdered aluminum, active metals. Acetylene, acetaldehyde cause explosive reactions. Iodine reacts with ammonium hydroxide to form shock sensitive compounds that are explosive when dry.
Hazardous Decomposition Products:
Hydrogen iodide.
Hazardous Polymerization: Will not occur.

**** SECTION 11 - TOXICOLOGICAL INFORMATION ****

RTECS#:
CAS# 7553-56-2: NN1575000
LD50/LC50:
CAS# 7553-56-2: Oral, mouse: LD50 = 22 gm/kg; Oral, rabbit: LD50 = 10 gm/kg; Oral, rat: LD50 = 14 gm/kg.
Carcinogenicity:
Iodine -
Not listed by ACGIH, IARC, NIOSH, NTP, or OSHA.
Epidemiology:
Experimental reproductive effects have been reported.
Teratogenicity:
No information available.
Reproductive Effects:
Reproductive effects have been reported in animals.
Neurotoxicity:
No information available.
Mutagenicity:
No information available.
Other Studies:
See actual entry in RTECS for complete information.

**** SECTION 12 - ECOLOGICAL INFORMATION ****

Ecotoxicity:
Fish, LC50: 28.5 mg/kg

**** SECTION 13 - DISPOSAL CONSIDERATIONS ****

hemical waste generators must determine whether a discarded chemical
s classified as a hazardous waste.
S EPA guidelines for the classification determination are listed in
0 CFR Parts 261.3. Additionally, waste generators must consult state
nd local hazardous waste regulations to ensure complete and accurate
lassification.
CRA P-Series: None listed.
CRA U-Series: None listed.

**** SECTION 14 - TRANSPORT INFORMATION ****

US DOT
Shipping Name: CORROSIVE SOLIDS, N.O.S.
Hazard Class: 8
UN Number: UN1759
Packing Group: II
Canadian TDG
Shipping Name: CORROSIVE SOLID NOS (IODINE)
Hazard Class: 8(9.2)
UN Number: UN1759

**** SECTION 15 - REGULATORY INFORMATION ****

JS FEDERAL
TSCA
CAS# 7553-56-2 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.
SARA
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 # 7553-56-2: acute, chronic, flammable.
Section 313
No chemicals are reportable under Section 313.
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
Iodine can be found on the following state right to know lists:
California, New Jersey, Pennsylvania, Minnesota, Massachusetts.
California No Significant Risk Level:
None of the chemicals in this product are listed.
European/International Regulations
European Labeling in Accordance with EC Directives
Hazard Symbols: XN N
Risk Phrases:
R 20/21 Harmful by inhalation and in contact with skin.
R 50 Very toxic to aquatic organisms.
Safety Phrases:
S 23 Do not inhale gas/fumes/vapour/spray.
S 25 Avoid contact with eyes.
S 61 Avoid release to the environment. Refer to special instructions/Safety data sheets.
WGK (Water Danger/Protection)
CAS# 7553-56-2: 1
United Kingdom Occupational Exposure Limits
CAS# 7553-56-2: OES-United Kingdom, STEL 0.1 ppm STEL; 1.1 mg/m3 STEL
United Kingdom Maximum Exposure Limits

Canada
CAS# 7553-56-2 is listed on Canada's DSL List.
This product has a WHMIS classification of E.
CAS# 7553-56-2 is listed on Canada's Ingredient Disclosure List.
Exposure Limits
CAS# 7553-56-2: OEL-ARAB Republic of Egypt:TWA 0.1 ppm (0.1 mg/m3)
OEL-AUSTRALIA:TWA 0.1 ppm (1 mg/m3)
OEL-BELGIUM:STEL 0.1 ppm (1 mg/m3)
OEL-DENMARK:.STEL 1 ppm (1 mg/m3)
OEL-FINLAND:STEL 0.1 ppm (1 mg/m3);Skin
OEL-FRANCE:STEL 0.1 ppm (1 mg/m3)
OEL-GERMANY:TWA 0.1 ppm (1 mg/m3)
OEL-HUNGARY:TWA 1 mg/m3;STEL 2 mg/m3
OEL-JAPAN:TWA 0.1 ppm (1 mg/m3);STEL 1 mg/m3 JAN9
OEL-THE NETHERLANDS:TWA 0.1 ppm (1 mg/m3)
OEL-THE PHILIPPINES:TWA 0.1 ppm (1 mg/m3)
OEL-POLAND:TWA 1 mg/m3
OEL-RUSSIA:TWA 0.1 ppm;STEL 1 mg/m3;Skin
OEL-SWEDEN:STEL 0.1 ppm (1 mg/m3)
OEL-SWITZERLAND:TWA 0.1 ppm (1 mg/m3);STEL 0.2 pp (2 mg/m3)
OEL-THAILAND:TWA 0.1 ppm (1 mg/m3)
OEL-TURKEY:TWA 0.1 ppm (1 mg/m3)
OEL-UNITED KINGDOM:STEL 0.1 ppm (1 mg/m3)
OEL IN BULGARIA, COLOMBIA, JORDAN, KOREA check ACGIH TLV
OEL IN NEW ZEALAND, SINGAPORE, VIETNAM check ACGI TLV

**** SECTION 16 - ADDITIONAL INFORMATION ****

MSDS Creation Date: 12/12/1997 Revision #7 Date: 3/22/2002

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 way shall the company 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 the company has been advised of the possibility of such damages.

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**** MATERIAL SAFETY DATA SHEET ****

Petrolatum, White
18325

**** SECTION 1 - CHEMICAL PRODUCT AND COMPANY IDENTIFICATION ****

MSDS Name: Petrolatum, White
Catalog Numbers:
AC417090030, S80117, NC9674574, P66 1LB, P66 7LB, P66-1LB, P66-7LB, P661LB, P667LB, XXP66385LB
Synonyms:
Petroleum Jelly
Company Identification: Fisher Scientific
1 Reagent Lane
Fairlawn, NJ 07410
For information, call: 201-796-7100
Emergency Number: 201-796-7100
For CHEMTREC assistance, call: 800-424-9300
For International CHEMTREC assistance, call: 703-527-3887

**** SECTION 2 - COMPOSITION, INFORMATION ON INGREDIENTS ****

CAS#	Chemical Name	%	EINECS#
8009-03-8	PETROLATUM	100	232-373-2

Hazard Symbols: None Listed.
Risk Phrases: None Listed.

**** SECTION 3 - HAZARDS IDENTIFICATION ****

EMERGENCY OVERVIEW
Appearance: almost colorless solid.
Caution! May cause eye and skin irritation. May cause respiratory and digestive tract irritation.
Target Organs: None known.

Potential Health Effects
Eye:
May cause mild eye irritation.
Skin:
May cause skin irritation. Low hazard for usual industrial handling.
Ingestion:
Ingestion of large amounts may cause gastrointestinal irritation.
Inhalation:
Inhalation of a mist of this material may cause respiratory tract irritation.
Chronic:
Prolonged or repeated skin contact may cause dermatitis.

**** 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:
Flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Get medical aid if irritation develops or persists. Wash clothing before reuse.
Ingestion:
Get medical aid. Do NOT induce vomiting. If conscious and alert, rinse mouth and drink 2-4 cupfuls of milk or 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 if cough or other symptoms appear.
Notes to Physician:
Treat symptomatically and

**** 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. Combustion generates toxic fumes. During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion.
Extinguishing Media:
Use agent most appropriate to extinguish fire. Use water spray, dry chemical, carbon dioxide, or appropriate foam.
Autoignition Temperature:Not available.
Flash Point: 185 deg C (365.00 deg F)
Explosion Limits, lower:Not available.
Explosion Limits, upper:Not available.
NFPA Rating: (estimated) Health: 1; Flammability: 1; Instability: 0

**** SECTION 6 - ACCIDENTAL RELEASE MEASURES ****

General Information: Use proper personal protective equipment as indicated in Section 8.
Spills/Leaks:
Absorb spill with inert material (e.g. vermiculite, sand or earth), then place in suitable container. Clean up spills immediately, observing precautions in the Protective Equipment section. Sweep up or absorb material, then place into a suitable clean, dry, closed container for disposal. Provide ventilation.

**** SECTION 7 - HANDLING and STORAGE ****

Handling:
Wash thoroughly after handling. Wash hands before eating. Use with adequate ventilation. Avoid contact with eyes, skin, and clothing. Keep container tightly closed. Avoid ingestion and inhalation.
Storage:
Store in a tightly closed container. Store in a cool, dry, well-ventilated area away from incompatible substances.

**** SECTION 8 - EXPOSURE CONTROLS, PERSONAL PROTECTION ****

Engineering Controls:
Good general ventilation should be sufficient to control airborne levels. Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower.

Exposure Limits

Chemical Name	ACGIH	NIOSH	OSHA - Final PELs
PETROLATUM	none listed	none listed	none listed

OSHA Vacated PELs:
PETROLATUM:
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:
Protective garments not normally required.
Clothing:
Protective garments not normally required.
Respirators:
A respiratory protection program that meets OSHA's 29 CFR 1910.134 and ANSI Z88.2 requirements or European Standard EN 149 must be followed whenever workplace conditions warrant a respirator's use.

**** SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES ****

Physical State:	Solid
Color:	almost colorless
Odor:	odorless
pH:	Not available.
Vapor Pressure:	Not available.
Vapor Density:	Not available.
Evaporation Rate:	Not available.
Viscosity:	cSt 100 deg C
Boiling Point:	Not available.
Freezing/Melting Point:	38 - 45 deg C
Decomposition Temperature:	
Solubility in water:	insoluble
Specific Gravity/Density:	.8400g/cm3
Molecular Formula:	
Molecular Weight:	

**** SECTION 10 - STABILITY AND REACTIVITY ****

Chemical Stability:
Stable under normal temperatures and pressures.
Conditions to Avoid:
Incompatible materials, excess heat.
Incompatibilities with Other Materials:
Oxidizing agents.
Hazardous Decomposition Products:
Carbon monoxide, irritating and toxic fumes and gases, carbon dioxide, irritating aldehydes and ketones.
Hazardous Polymerization: Will not occur.

**** SECTION 11 - TOXICOLOGICAL INFORMATION ****

RTECS#:

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CAS# 8009-03-8: SE6780000
LD50/LC50:
Not available.
Carcinogenicity:
PETROLATUM -
Not listed by ACGIH, IARC, NIOSH, NTP, or OSHA.
Epidemiology:
No information available.
Teratogenicity:
No information available.
Reproductive Effects:
No information available.
Neurotoxicity:
No information available.
Mutagenicity:
No information available.
Other Studies:
No data available.

**** SECTION 12 - ECOLOGICAL INFORMATION ****

**** 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
No information available
Canadian TDG
No information available.

**** SECTION 15 - REGULATORY INFORMATION ****

US FEDERAL
TSCA
CAS# 8009-03-8 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.
SARA
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.
Section 313
No chemicals are reportable under Section 313.
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
PETROLATUM is not present on state lists from CA, PA, MN, MA, FL, or NJ.
California No Significant Risk Level:
None of the chemicals in this product are listed.
European/International Regulations
European Labeling in Accordance with EC Directives
Hazard Symbols: Not available.
Risk Phrases:
Safety Phrases:
S 24/25 Avoid contact with skin and eyes.
S 28A After contact with skin, wash immediately with plenty of water.
S 37 Wear suitable gloves.

S 45 In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).
WGK (Water Danger/Protection)
CAS# 8009-03-8: 0
United Kingdom Occupational Exposure Limits

United Kingdom Maximum Exposure Limits

Canada
CAS# 8009-03-8 is listed on Canada's DSL List.
This product has a WHMIS classification of D2B.
CAS# 8009-03-8 is not listed on Canada's Ingredient Disclosure List.
Exposure Limits

**** SECTION 16 - ADDITIONAL INFORMATION ****

MSDS Creation Date: 7/07/1999 Revision #3 Date: 3/18/2003

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 way shall the company 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 the company has been advised of the possibility of such damages.

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**** MATERIAL SAFETY DATA SHEET ****

Sulfur (Precipitated and Sublimed)
22280

**** SECTION 1 - CHEMICAL PRODUCT AND COMPANY IDENTIFICATION ****

MSDS Name: Sulfur (Precipitated and Sublimed)
Catalog Numbers:
S71209, S79172, S79173, S79173-1, S79173-2, S79173-3, S594-500, S595-500
Synonyms:
Sulphur; Brimstone.
Company Identification: Fisher Scientific
1 Reagent Lane
Fairlawn, NJ 07410
For information, call: 201-796-7100
Emergency Number: 201-796-7100
For CHEMTREC assistance, call: 800-424-9300
For International CHEMTREC assistance, call: 703-527-3887

**** SECTION 2 - COMPOSITION, INFORMATION ON INGREDIENTS ****

CAS#	Chemical Name	%	EINECS#
7704-34-9	Sulfur	100	231-722-6

Hazard Symbols: XI
Risk Phrases: 36/37/38

**** SECTION 3 - HAZARDS IDENTIFICATION ****

EMERGENCY OVERVIEW

Appearance: yellow solid.
Warning! Flammable solid. Causes respiratory tract irritation. May cause digestive tract irritation. Irritant. May cause central nervous system effects. Causes eye and skin irritation.
Target Organs: Central nervous system, respiratory system, eyes, skin.

Potential Health Effects

Eye:
Causes eye irritation. Effects may be delayed. Causes redness and pain. May cause chemical conjunctivitis and corneal damage.

Skin:
Causes skin irritation. Causes redness and pain.

Ingestion:
May cause gastrointestinal irritation with nausea, vomiting and diarrhea.

Inhalation:
Causes respiratory tract irritation. Olfactory fatigue may occur. Can produce delayed pulmonary edema. May cause central nervous system effects

Chronic:
Prolonged or repeated skin contact may cause dermatitis. Chronic inhalation may cause effects similar to those of acute inhalation.

**** SECTION 4 - FIRST AID MEASURES ****

Eyes:
Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical aid.

Skin:
Flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Get medical aid if irritation develops or persists. Wash clothing before reuse.

Ingestion:
Never give anything by mouth to an unconscious person. Do NOT induce vomiting. If conscious and alert, rinse mouth and drink 2-4 cupfuls of milk or water. Get medical aid if irritation or symptoms occur.

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 if cough or other symptoms appear. Do NOT use mouth-to-mouth resuscitation.

Notes to Physician:
Treat symptomatically and supportively.

**** SECTION 5 - FIRE FIGHTING MEASURES ****

General Information:
Evacuate area and fight fire from a safe distance. As in any fire, wear a self-contained breathing apparatus in pressure-demand, MSHA/NIOSH (approved or equivalent), and full protective gear. During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion. Dust can be an explosion hazard when exposed to heat or flame. This material in sufficient quantity and reduced particle size is capable of creating a dust explosion. Flammable solid. May burn rapidly with flare burning effect. May

re-ignite after fire is extinguished.
Extinguishing Media:
Water spray may cause frothing. For large fires, use water spray, fog or regular foam. Contact professional fire-fighters immediately. For small fires, use dry chemical, carbon dioxide, sand, earth, water spray or regular foam. Cool containers with flooding quantities of water until well after fire is out.
Autoignition Temperature:450 deg F (232.22 deg C)
Flash Point: 405 deg F (207.22 deg C)
Explosion Limits, lower:3.3%
Explosion Limits, upper:46.0%
NFPA Rating: (estimated) Health: 2; Flammability: 2; Instability: 0

**** 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. Clean up spills immediately, observing precautions in the Protective Equipment section. Scoop up with a nonsparking tool, then place into a suitable container for disposal. Avoid generating dusty conditions. Remove all sources of ignition. Provide ventilation.

**** SECTION 7 - HANDLING and STORAGE ****

Handling:
Wash thoroughly after handling. Remove contaminated clothing and wash before reuse. Minimize dust generation and accumulation. May form flammable dust-air mixtures. Avoid contact with eyes, skin, and clothing. Empty containers retain product residue, (liquid and/or vapor), and can be dangerous. Keep container tightly closed. Avoid contact with heat, sparks and flame. Use with adequate ventilation. Do not pressurize, cut, weld, braze, solder, drill, grind, or expose empty containers to heat, sparks or open flames.

Storage:
Keep away from heat, sparks, and flame. Keep away from sources of ignition. Store in a tightly closed container. Store in a cool, dry, well-ventilated area away from incompatible substances.

**** SECTION 8 - EXPOSURE CONTROLS, PERSONAL PROTECTION ****

Engineering Controls:
Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower. Use adequate general or local explosion-proof ventilation to keep airborne levels to acceptable levels.

Exposure Limits

Chemical Name	ACGIH	NIOSH	OSHA - Final PELs
Sulfur	none listed	none listed	none listed

OSHA Vacated PELs:
Sulfur:
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:
A respiratory protection program that meets OSHA's 29 CFR 1910.134 and ANSI Z88.2 requirements or European Standard EN 149 must be followed whenever workplace conditions warrant a respirator's use.

**** SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES ****

Physical State:	Solid
Color:	yellow
Odor:	rotten egg-like
pH:	Not available.
Vapor Pressure:	Not available.
Vapor Density:	Not available.
Evaporation Rate:	Not available.
Viscosity:	Not available.
Boiling Point:	445 deg C

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reezing/Melting Point: 113 deg C
ecomposition Temperature: Not applicable.
olubility in water: Insoluble in water.
pecific Gravity/Density: 2.07
olecular Formula: S
olecular Weight: 32.06

**** SECTION 10 - STABILITY AND REACTIVITY ****

Chemical Stability:
Stable at room temperature in closed containers under normal storage and handling conditions.
Conditions to Avoid:
High temperatures, incompatible materials, ignition sources, dust generation, excess heat.
Incompatibilities with Other Materials:
Strong oxidizing agents.
Hazardous Decomposition Products:
Sulfur oxides (SOx), including sulfur oxide and sulfur dioxide.
Hazardous Polymerization: Has not been reported.

**** SECTION 11 - TOXICOLOGICAL INFORMATION ****

RTECS#:
CAS# 7704-34-9: WS4250000
LD50/LC50:
Not available.
Carcinogenicity:
Sulfur -
Not listed by ACGIH, IARC, NIOSH, NTP, or OSHA.
Epidemiology:
No information available.
Teratogenicity:
No information available.
Reproductive Effects:
No information available.
Neurotoxicity:
No information available.
Mutagenicity:
No information available.
Other Studies:
No data available.

**** SECTION 12 - ECOLOGICAL INFORMATION ****

**** SECTION 13 - DISPOSAL CONSIDERATIONS ****

hemical waste generators must determine whether a discarded chemical
s classified as a hazardous waste.
S EPA guidelines for the classification determination are listed in
0 CFR Parts 261.3. Additionally, waste generators must consult state
nd local hazardous waste regulations to ensure complete and accurate
lassification.
CRA P-Series: None listed.
CRA U-Series: None listed.

**** SECTION 14 - TRANSPORT INFORMATION ****

US DOT
Shipping Name: SULFUR
Hazard Class: 9
UN Number: NA1350
Packing Group: III
Canadian TDG
No information available.

**** SECTION 15 - REGULATORY INFORMATION ****

US FEDERAL
TSCA
CAS# 7704-34-9 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.
SARA
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 # 7704-34-9: acute, chronic, flammable.
Section 313

No chemicals are reportable under Section 313.
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
Sulfur can be found on the following state right to know lists:
California, New Jersey, Pennsylvania, Massachusetts.
California No Significant Risk Level:
None of the chemicals in this product are listed.
European/International Regulations
European Labeling in Accordance with EC Directives
Hazard Symbols: XI
Risk Phrases:
R 36/37/38 Irritating to eyes, respiratory system and skin.
Safety Phrases:
S 26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
S 37/39 Wear suitable gloves and eye/face protection.
WGK (Water Danger/Protection)
CAS# 7704-34-9: 1
United Kingdom Occupational Exposure Limits

United Kingdom Maximum Exposure Limits

Canada
CAS# 7704-34-9 is listed on Canada's DSL List.
This product has a WHMIS classification of B4, D2B.
CAS# 7704-34-9 is not listed on Canada's Ingredient Disclosure List.
Exposure Limits

**** SECTION 16 - ADDITIONAL INFORMATION ****

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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 way shall the company 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 the company has been advised of the possibility of such damages.

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