

1. Identification

Product identifier	WATERMARK® KARL FISCHER REAGENT, 5 MG/ML, STABILIZED, PYRIDINE-BASED	
Other means of identification		
Product code	1620	
Recommended use	Laboratory reagent for water determination using the Karl Fischer method.	
Recommended restrictions	None known.	
Manufacturer/Importer/Supplier/Distributor information		
Company name	GFS Chemicals, Inc.	
Address	P.O. Box 245 Powell OH 43065 US	
Telephone	Phone	740-881-5501
	Toll Free	800-858-9682
	Fax	740-881-5989
Website	www.gfschemicals.com	
E-mail	service@gfschemicals.com	
Emergency phone number	Emergency Assistance	Chemtrec 800-424-9300

2. Hazard(s) identification

Physical hazards	Flammable liquids	Category 3
Health hazards	Skin corrosion/irritation	Category 1A
	Serious eye damage/eye irritation	Category 1
	Sensitization, skin	Category 1
	Carcinogenicity	Category 2
	Reproductive toxicity	Category 1
	Specific target organ toxicity, single exposure	Category 1 (central nervous system, kidney, liver, nervous system, respiratory system, testes)
	Specific target organ toxicity, single exposure	Category 3 narcotic effects
	Specific target organ toxicity, repeated exposure	Category 1 (central nervous system, hematopoietic system, kidney, liver, nervous system, respiratory system, testes, thyroid gland)
OSHA hazard(s)	Not classified.	

Label elements



Signal word

Danger

Hazard statement

Flammable liquid and vapor. Causes severe skin burns and eye damage. May cause an allergic skin reaction. Causes serious eye damage. May cause drowsiness or dizziness. Suspected of causing cancer. May damage fertility or the unborn child. Causes damage to organs (central nervous system, kidney, liver, nervous system, respiratory system, testes). Causes damage to organs (central nervous system, hematopoietic system, kidney, liver, nervous system, respiratory system, testes, thyroid gland) through prolonged or repeated exposure. Harmful to aquatic life. Harmful to aquatic life with long lasting effects.

Precautionary statement

Prevention

Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Keep away from heat/sparks/open flames/hot surfaces. - No smoking. Use only outdoors or in a well-ventilated area. Keep container tightly closed. Ground/bond container and receiving equipment. Use explosion-proof electrical/ventilating/lighting equipment. Use only non-sparking tools. Take precautionary measures against static discharge. Do not breathe mist or vapor. Wash thoroughly after handling. Do not eat, drink or smoke when using this product. Contaminated work clothing must not be allowed out of the workplace. Wear protective gloves/protective clothing/eye protection/face protection.

Response

In case of fire: Use appropriate media for extinction. Eliminate all ignition sources if safe to do so. If swallowed: Rinse mouth. Do NOT induce vomiting. If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower. If inhaled: Remove person to fresh air and keep comfortable for breathing. If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If exposed or concerned: Get medical advice/attention.

Storage

Store in a well-ventilated place. Keep container tightly closed. Store in a well-ventilated place. Keep cool. Store locked up.

Disposal

Dispose of contents/container to an approved incineration plant.

Hazard(s) not otherwise classified (HNOC)

Static accumulating flammable liquid

Environmental hazards

Hazardous to the aquatic environment, acute hazard Category 1

Hazardous to the aquatic environment, long-term hazard Category 2

Supplemental information

Hazard statement

Static accumulating flammable liquid can become electrostatically charged even in bonded and grounded equipment. Sparks may ignite liquid and vapor. May cause flash fire or explosion.

Precautionary statement

Prevention

Keep away from heat/sparks/open flames/hot surfaces. - No smoking. Ground/bond container and receiving equipment. These alone may be insufficient to remove static electricity. Avoid release to the environment.

Disposal

Dispose of contents/container in accordance with local/regional/national/international regulations.

% of the mixture consists of component(s) of unknown acute hazards to the aquatic environment. % of the mixture consists of component(s) of unknown long-term hazards to the aquatic environment.

3. Composition/information on ingredients

Mixtures

Hazardous components

Chemical name	CAS number	%
ETHYLENEGLYCOLMONOMETHYL ETHER	109-86-4	50 - < 60*
PYRIDINE	110-86-1	30 - < 40*
IODINE	7553-56-2	5 - < 10*
SULFUR DIOXIDE	7446-09-5	5 - < 10*

*Designates that a specific chemical identity and/or percentage of composition has been withheld as a trade secret.

4. First-aid measures

Inhalation

Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a physician or poison control center immediately.

Skin contact

Take off immediately all contaminated clothing. Wash off with soap and plenty of water. Call a physician or poison control center immediately. For minor skin contact, avoid spreading material on unaffected skin. Get medical attention if irritation develops and persists. If skin irritation or rash occurs: Get medical advice/attention.

Eye contact

Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Call a physician or poison control center immediately. Get medical attention if irritation develops and persists.

Ingestion

Call a physician or poison control center immediately. Rinse mouth. Do not induce vomiting. If vomiting occurs, keep head low so that stomach content doesn't get into the lungs.

Most important symptoms/effects, acute and delayed	Corrosive effects. Irritation of eyes and mucous membranes. May cause temporary blindness and severe eye damage. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. May cause allergic skin reaction. Vapors have a narcotic effect and may cause headache, fatigue, dizziness and nausea. Unconsciousness. Narcosis. Cyanosis (blue tissue condition, nails, lips, and/or skin). Decrease in motor functions. Behavioral changes. Edema. Liver enlargement. Jaundice. Proteinuria. Prolonged exposure may cause chronic effects.
Indication of immediate medical attention and special treatment needed	In case of shortness of breath, give oxygen. Keep victim warm. Keep victim under observation. Symptoms may be delayed. Provide general supportive measures and treat symptomatically.
General information	Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. IF exposed or concerned: Get medical advice/attention. Wash contaminated clothing before reuse.

5. Fire-fighting measures

Suitable extinguishing media	Water fog. Carbon dioxide (CO ₂). Dry chemical powder, carbon dioxide, sand or earth may be used for small fires only. Alcohol resistant foam. Powder.
Unsuitable extinguishing media	Do not use water jet as an extinguisher, as this will spread the fire.
Specific hazards arising from the chemical	This product is a poor conductor of electricity and can become electrostatically charged. If sufficient charge is accumulated, ignition of flammable mixtures can occur. To reduce potential for static discharge, use proper bonding and grounding procedures. This liquid may accumulate static electricity when filling properly grounded containers. Static electricity accumulation may be significantly increased by the presence of small quantities of water or other contaminants. By heating and fire, harmful vapors/gases may be formed. Material will float and may ignite on surface of water.
Special protective equipment and precautions for firefighters	Firefighters must use standard protective equipment including flame retardant coat, helmet with face shield, gloves, rubber boots, and in enclosed spaces, SCBA. Structural firefighters protective clothing will only provide limited protection.
Fire-fighting equipment/instructions	In case of fire and/or explosion do not breathe fumes. Use standard firefighting procedures and consider the hazards of other involved materials. Move containers from fire area if you can do so without risk. Water runoff can cause environmental damage.
Specific methods	In the event of fire and/or explosion do not breathe fumes. Self-contained breathing apparatus and full protective clothing must be worn in case of fire. Use standard firefighting procedures and consider the hazards of other involved materials. Move container from fire area if it can be done without risk.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures	Remove all possible sources of ignition in the surrounding area. Use appropriate containment to avoid environmental contamination. Transfer by mechanical means such as vacuum truck to a salvage tank or other suitable container for recovery or safe disposal. ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area). Keep unnecessary personnel away. Local authorities should be advised if significant spillages cannot be contained. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Keep people away from and upwind of spill/leak. Keep upwind. Keep out of low areas. Ventilate closed spaces before entering them. Avoid inhalation of vapors or mists. Wear appropriate personal protective equipment.
Methods and materials for containment and cleaning up	ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area). Keep combustibles (wood, paper, oil, etc.) away from spilled material. Should not be released into the environment. This product is miscible in water. Large Spills: Stop leak if you can do so without risk. Dike the spilled material, where this is possible. Cover with plastic sheet to prevent spreading. Use a non-combustible material like vermiculite, sand or earth to soak up the product and place into a container for later disposal. Use water spray to reduce vapors or divert vapor cloud drift. This material and its container must be disposed of as hazardous waste. Following product recovery, flush area with water. Clean up in accordance with all applicable regulations. Small Spills: Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination. This material is classified as a water pollutant under the Clean Water Act and should be prevented from contaminating soil or from entering sewage and drainage systems which lead to waterways. Never return spills in original containers for re-use. For waste disposal, see section 13 of the MSDS.

Environmental precautions

Contact local authorities in case of spillage to drain/aquatic environment. Avoid discharge into drains, water courses or onto the ground. Avoid release to the environment. Use appropriate containment to avoid environmental contamination. Prevent further leakage or spillage if safe to do so. Do not contaminate water.

7. Handling and storage**Precautions for safe handling**

Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Minimize fire risks from flammable and combustible materials (including combustible dust and static accumulating liquids) or dangerous reactions with incompatible materials. Handling operations that can promote accumulation of static charges include but are not limited to: mixing, filtering, pumping at high flow rates, splash filling, creating mists or sprays, tank and container filling, tank cleaning, sampling, gauging, switch loading, vacuum truck operations. For additional information on equipment bonding and grounding, refer to the Canadian Electrical Code in Canada, (CSA C22.1), or the American Petroleum Institute (API) Recommended Practice 2003, "Protection Against Ignitions Arising out of Static, Lightning, and Stray Currents" or National Fire Protection Association (NFPA) 77, "Recommended Practice on Static Electricity" or National Fire Protection Association (NFPA) 70, "National Electrical Code". DO NOT handle, store or open near an open flame, sources of heat or sources of ignition. Protect material from direct sunlight. Take precautionary measures against static discharges. All equipment used when handling the product must be grounded. Use non-sparking tools and explosion-proof equipment. Do not breathe mist or vapor. Do not get this material in contact with eyes. Do not get this material in contact with skin. Avoid contact during pregnancy/while nursing. Do not get this material on clothing. Use personal protective equipment as required. Avoid prolonged exposure. When using, do not eat, drink or smoke. Wash hands thoroughly after handling. Avoid release to the environment. Do not empty into drains.

Conditions for safe storage, including any incompatibilities

Store locked up. Keep away from heat, sparks and open flame. Prevent electrostatic charge build-up by using common bonding and grounding techniques. Store in cool place. Eliminate sources of ignition. Avoid spark promoters. Ground/bond container and equipment. These alone may be insufficient to remove static electricity. Refrigeration recommended. Store in a well-ventilated place. Keep container tightly closed. Keep in an area equipped with sprinklers. Keep out of the reach of children. Store in a cool, dry place out of direct sunlight.

8. Exposure controls/personal protection**Occupational exposure limits****US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)**

Components	Type	Value
ETHYLENEGLYCOLM ONOMETHYL ETHER (CAS 109-86-4)	PEL	80 mg/m3
IODINE (CAS 7553-56-2)	Ceiling	25 ppm 1 mg/m3 0.1 ppm
PYRIDINE (CAS 110-86-1)	PEL	15 mg/m3 5 ppm
SULFUR DIOXIDE (CAS 7446-09-5)	PEL	13 mg/m3 5 ppm

US. ACGIH Threshold Limit Values

Components	Type	Value	Form
ETHYLENEGLYCOLM ONOMETHYL ETHER (CAS 109-86-4)	TWA	0.1 ppm	
IODINE (CAS 7553-56-2)	STEL TWA	0.1 ppm 0.01 ppm	Vapor and aerosol. Inhalable fraction and vapor.
PYRIDINE (CAS 110-86-1)	TWA	1 ppm	
SULFUR DIOXIDE (CAS 7446-09-5)	STEL	0.25 ppm	

US. NIOSH: Pocket Guide to Chemical Hazards

Components	Type	Value
ETHYLENEGLYCOLM ONOMETHYL ETHER (CAS 109-86-4)	TWA	0.3 mg/m3
IODINE (CAS 7553-56-2)	Ceiling	0.1 ppm 1 mg/m3 0.1 ppm

US. NIOSH: Pocket Guide to Chemical Hazards

Components	Type	Value
PYRIDINE (CAS 110-86-1)	TWA	15 mg/m3 5 ppm
SULFUR DIOXIDE (CAS 7446-09-5)	REL	5 mg/m3 2 ppm
	STEL	13 mg/m3 5 ppm

Biological limit values**US. ACGIH. BEIs. Biological Exposure Indices**

Components	Value	Determinant	Specimen	Sampling Time
ETHYLENEGLYCOLMONOMETHYL ETHER (CAS 109-86-4)	1 mg/g	2-Methoxyacetic acid	Creatinine in urine	*

* - For sampling details, please see the source document.

Exposure guidelines**US. ACGIH Threshold Limit Values**

ETHYLENEGLYCOLMONOMETHYL ETHER (CAS 109-86-4) Can be absorbed through the skin.

US. California Code of Regulations, Title 8, Section 5155. Airborne Contaminants

2-METHOXYETHANOL (CAS 109-86-4) Can be absorbed through the skin.

US. Minnesota Hazardous Substances List (Minn. Rules 5206.0400).

ETHYLENEGLYCOLMONOMETHYL ETHER (CAS 109-86-4) Skin designation applies.

US. NIOSH: Pocket Guide to Chemical Hazards

ETHYLENEGLYCOLMONOMETHYL ETHER (CAS 109-86-4) Can be absorbed through the skin.

US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)

ETHYLENEGLYCOLMONOMETHYL ETHER (CAS 109-86-4) Can be absorbed through the skin.

US. OSHA Table Z-1-A (29 CFR 1910.1000)

ETHYLENEGLYCOLMONOMETHYL ETHER (CAS 109-86-4) Can be absorbed through the skin.

US. Tennessee. OELs. Occupational Exposure Limits, Table Z1A

ETHYLENEGLYCOLMONOMETHYL ETHER (CAS 109-86-4) Can be absorbed through the skin.

Appropriate engineering controls Explosion-proof general and local exhaust ventilation. An eye wash and safety shower must be available in the immediate work area.

Individual protection measures, such as personal protective equipment

Eye/face protection Chemical goggles are recommended.

Skin protection

Hand protection Wear protective gloves.

Other Wear appropriate chemical resistant clothing. It may provide little or no thermal protection. Wear protective gloves.

Respiratory protection Use an organic vapor respirator for concentrations exceeding the Occupational Exposure Limit.

Thermal hazards Not available.

General hygiene considerations When using, do not eat, drink or smoke. Do not get in eyes. Do not get this material in contact with skin. Do not get this material on clothing. Wash hands before breaks and immediately after handling the product. Contaminated work clothing should not be allowed out of the workplace. Handle in accordance with good industrial hygiene and safety practice.

9. Physical and chemical properties

Appearance	Liquid.
Physical state	Liquid.
Form	Liquid.
Color	Red brown.
Odor	strong pungent.
Odor threshold	Not available.
pH	Not available.
Melting point/freezing point	-70 °F (-57 °C) estimated
Initial boiling point and boiling range	239 °F (115 °C) estimated
Flash point	93 °F (34 °C) estimated
Evaporation rate	Not available.

Material name: WATERMARK® KARL FISCHER REAGENT, 5 MG/ML, STABILIZED, PYRIDINE-BASED

1620

Version #: 01

Revision date: Issue date: May-14-2014

SDS US

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Flammability (solid, gas)	Not applicable.
Upper/lower flammability or explosive limits	
Flammability limit - lower (%)	2.2 % estimated
Flammability limit - upper (%)	12.4 % estimated
Explosive limit - lower (%)	Not available.
Explosive limit - upper (%)	Not available.
Vapor pressure	334 hPa estimated
Vapor density	Not available.
Relative density	Not available.
Solubility(ies)	Miscible.
Partition coefficient (n-octanol/water)	Not available.
Auto-ignition temperature	674 °F (357 °C) estimated
Decomposition temperature	Not available.
Viscosity	Not available.
Other information	
Density	1.13 g/cm ³
Flammability class	Flammable IC estimated
Flash point class	Flammable IC
Percent volatile	> 80 %
Specific gravity	1.13
VOC (Weight %)	> 80 %

10. Stability and reactivity

Reactivity	Not available.
Chemical stability	Risk of ignition. Material is stable under normal conditions.
Possibility of hazardous reactions	Hazardous polymerization does not occur.
Conditions to avoid	Heat, flames and sparks. Avoid temperatures exceeding the flash point.
Incompatible materials	Aluminum. Strong oxidizing agents. Strong acids. Ammonia. Caustics.
Hazardous decomposition products	Upon decomposition, this product emits oxides of sulfur, carbon monoxide, carbon dioxide and/or low molecular weight hydrocarbons. Irritating and/or toxic fumes and gases may be emitted upon the products decomposition.

11. Toxicological information

Information on likely routes of exposure

Ingestion	Causes digestive tract burns.
Inhalation	Vapors have a narcotic effect and may cause headache, fatigue, dizziness and nausea. May cause irritation to the respiratory system.
Skin contact	Causes severe skin burns. May cause an allergic skin reaction.
Eye contact	Causes severe eye burns. Causes serious eye damage.
Symptoms related to the physical, chemical and toxicological characteristics	Burning pain and severe corrosive skin damage. Permanent eye damage including blindness could result. Unconsciousness. Narcosis. Cyanosis (blue tissue condition, nails, lips, and/or skin). Edema. Liver enlargement. Jaundice. Proteinuria. Behavioral changes. Decrease in motor functions. Symptoms of overexposure may be headache, dizziness, tiredness, nausea and vomiting.

Information on toxicological effects

Acute toxicity Causes severe skin burns and eye damage.

Product	Species	Test Results
WATERMARK® KARL FISCHER REAGENT, 5 MG/ML, STABILIZED, PYRIDINE-BASED (CAS Mixture)		
Acute		
<i>Dermal</i>		
LD50	Rabbit	3616 mg/kg

Product	Species	Test Results	
<i>Inhalation</i>			
LC50	Guinea pig	12500 mg/l, 20 Hours, estimated	
		7063 mg/l	
	Mouse	1625 mg/l, 154 Hours, estimated	
		12500 mg/l, 4 Hours, estimated	
	Rat	7188 mg/l	
		1875 mg/l, 847 Hours, estimated	
		29032.2578 ppm, 1 Hours, estimated	
		12903.2256 ppm, 4 Hours, estimated	
		12903.2256 mg/l, 4 Hours, estimated	
		2535.2112 mg/l, 1 Hours, estimated	
LD50	Rat	2453 mg/l	
		29032.2578 mg/l, 1 Hours, estimated	
		29032.2578 ppm, 1 Hours, estimated	
<i>Oral</i>	Guinea pig	29032 mg/l	
		LD50	
	Mouse	12903 mg/kg	
		4295 mg/kg	
	Rabbit	1.7137 g/kg, estimated	
		99999 mg/kg	
	Rat	142.8571 g/kg, estimated	
		2116 mg/kg	
	<i>Other</i>	Dog	2.5478 g/kg, estimated
			LD50
Guinea pig		2839 mg/kg	
		3.2258 ml/kg, estimated	
Mouse		1355 mg/kg	
		2.5806 g/kg, estimated	
Rat		898.1115 mg/kg, estimated	
		2.5806 g/kg, estimated	

Components	Species	Test Results
ETHYLENEGLYCOLMONOMETHYL ETHER (CAS 109-86-4)		
Acute		
<i>Dermal</i>		
LD50	Rabbit	1280 mg/kg
<i>Inhalation</i>		
LC50	Rat	1500 mg/l, 7 hours
<i>Oral</i>		
LD50	Guinea pig	950 mg/kg
	Mouse	2560 mg/kg
		2.8 g/kg
	Rabbit	890 mg/kg
	Rat	2370 mg/kg
<i>Other</i>		
LD50	Mouse	2147 mg/kg
	Rat	2140 mg/kg

Components	Species	Test Results
IODINE (CAS 7553-56-2)		
Acute		
<i>Oral</i>		
LD50	Mouse	22 g/kg
	Rabbit	10 g/kg
	Rat	14 g/kg
PYRIDINE (CAS 110-86-1)		
Acute		
<i>Dermal</i>		
LD50	Rabbit	1121 mg/kg
<i>Inhalation</i>		
LC50	Rat	9000 ppm, 1 Hours 9000 mg/l, 1 Hours 4000 ppm, 4 Hours 4000 mg/l, 4 Hours
LD50	Rat	9000 ppm, 1 Hours 9000 mg/l, 1 Hours
<i>Oral</i>		
LD50	Guinea pig	4000 mg/kg
	Mouse	800 - 1600 mg/kg 1500 mg/kg 0.8 g/kg
	Rat	800 - 1600 mg/kg 1580 mg/kg 1500 mg/kg 891 mg/kg 0.8 g/kg
<i>Other</i>		
LD50	Dog	880 mg/kg
	Guinea pig	1 ml/kg
	Mouse	420 mg/kg 0.8 g/kg
	Rat	360 mg/kg 0.8 g/kg
SULFUR DIOXIDE (CAS 7446-09-5)		
Acute		
<i>Inhalation</i>		
LC50	Guinea pig	1000 mg/l, 20 Hours 130 mg/l, 154 Hours
	Mouse	1000 mg/l, 4 Hours 150 mg/l, 847 Hours

* Estimates for product may be based on additional component data not shown.

Skin corrosion/irritation	Causes severe skin burns and eye damage.
Serious eye damage/eye irritation	Causes severe eye burns. Causes serious eye damage.
Respiratory sensitization	Due to lack of data the classification is not possible.
Skin sensitization	May cause an allergic skin reaction.
Germ cell mutagenicity	Due to lack of data the classification is not possible.
Carcinogenicity	Suspected of causing cancer.

IARC Monographs. Overall Evaluation of Carcinogenicity

PYRIDINE (CAS 110-86-1)	3 Not classifiable as to carcinogenicity to humans.
SULFUR DIOXIDE (CAS 7446-09-5)	3 Not classifiable as to carcinogenicity to humans.

Reproductive toxicity	Possible reproductive hazard. May damage fertility or the unborn child.
Specific target organ toxicity - single exposure	May cause irritation to the respiratory system. Narcotic effects. Causes damage to organs (central nervous system, kidney, liver, nervous system, respiratory system, testes).
Specific target organ toxicity - repeated exposure	Causes damage to organs (central nervous system, hematopoietic system, kidney, liver, nervous system, respiratory system, testes, thyroid gland) through prolonged or repeated exposure.
Aspiration hazard	Due to lack of data the classification is not possible.
Chronic effects	Prolonged inhalation may be harmful. Causes damage to organs through prolonged or repeated exposure.

12. Ecological information

Ecotoxicity	Harmful to aquatic life with long lasting effects. Accumulation in aquatic organisms is expected. Contains a substance which causes risk of hazardous effects to the environment.
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Product	Species	Test Results
WATERMARK® KARL FISCHER REAGENT, 5 MG/ML, STABILIZED, PYRIDINE-BASED (CAS Mixture)		
Fish	LC50	Fish
		27.4883 mg/l, 96 hours, estimated
Components	Species	Test Results
ETHYLENEGLYCOLMONOMETHYL ETHER (CAS 109-86-4)		
Aquatic		
Fish	LC50	Bluegill (Lepomis macrochirus)
		> 10000 mg/l, 96 hours
IODINE (CAS 7553-56-2)		
Aquatic		
Fish	LC50	Rainbow trout,donaldson trout (Oncorhynchus mykiss)
		0.48 - 0.58 mg/l, 96 hours
		0.48 - 0.58 mg/l, 96 hours
PYRIDINE (CAS 110-86-1)		
Aquatic		
Fish	LC50	Chinook salmon (Oncorhynchus tshawytscha)
		2.9 mg/l, 96 hours

* Estimates for product may be based on additional component data not shown.

Persistence and degradability	No data is available on the degradability of this product.
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Bioaccumulative potential	Not available.
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Partition coefficient n-octanol / water (log Kow)

PYRIDINE	0.65
ETHYLENEGLYCOLMONOMETHYL ETHER	-0.77
IODINE	2.49

Mobility in soil	Not available.
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Other adverse effects	Not available.
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13. Disposal considerations

Disposal instructions	Collect and reclaim or dispose in sealed containers at licensed waste disposal site. This material and its container must be disposed of as hazardous waste. Incinerate the material under controlled conditions in an approved incinerator. Do not incinerate sealed containers. Do not allow this material to drain into sewers/water supplies. Do not contaminate ponds, waterways or ditches with chemical or used container. If discarded, this product is considered a RCRA ignitable waste, D001. Dispose of contents/container in accordance with local/regional/national/international regulations.
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Local disposal regulations	Not available.
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Hazardous waste code	D001: Waste Flammable material with a flash point <140 F D038: Waste Pyridine
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Waste from residues / unused products	Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions).
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Contaminated packaging	Empty containers should be taken to an approved waste handling site for recycling or disposal. Since emptied containers may retain product residue, follow label warnings even after container is emptied.
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14. Transport information

DOT	
UN number	UN1993
UN proper shipping name	Flammable liquids, n.o.s. (ETHYLENEGLYCOLMONOMETHYL ETHER, PYRIDINE RQ = 3226 LBS)
Transport hazard class(es)	3
Subsidiary class(es)	Not available.
Packing group	III
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.
Labels required	3
Special provisions	B1, B52, IB3, T4, TP1, TP29
Packaging exceptions	150
Packaging non bulk	203
Packaging bulk	242

IATA	
UN number	UN1993
UN proper shipping name	Flammable liquids, n.o.s. (ETHYLENEGLYCOLMONOMETHYL ETHER, PYRIDINE)
Transport hazard class(es)	3
Subsidiary class(es)	-
Packaging group	III
Environmental hazards	No
Labels required	3
ERG Code	Not available.
Special precautions for user	Not available.

IMDG	
UN number	UN1993
UN proper shipping name	Flammable liquids, n.o.s. (ETHYLENEGLYCOLMONOMETHYL ETHER, PYRIDINE)
Transport hazard class(es)	3
Subsidiary class(es)	-
Packaging group	III
Environmental hazards	
Marine pollutant	No
Labels required	3
EmS	Not available.
Special precautions for user	Not available.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code No information available.

General information DOT Regulated Marine Pollutant.

DOT



IATA; IMDG



15. Regulatory information

US federal regulations All components are on the U.S. EPA TSCA Inventory List.

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

ETHYLENEGLYCOLMONOMETHYL ETHER (CAS 109-86-4) 1.0 % One-Time Export Notification only.

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

Not on regulatory list.

CERCLA Hazardous Substance List (40 CFR 302.4)

PYRIDINE (CAS 110-86-1) LISTED

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories
Immediate Hazard - Yes
Delayed Hazard - Yes
Fire Hazard - Yes
Pressure Hazard - No
Reactivity Hazard - No

SARA 302 Extremely hazardous substance No

SARA 311/312 Hazardous chemical No

Other federal regulations

Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List

Not regulated.

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

SULFUR DIOXIDE (CAS 7446-09-5)

Safe Drinking Water Act (SDWA) Not regulated.

Drug Enforcement Administration (DEA). List 2, Essential Chemicals (21 CFR 1310.02(b) and 1310.04(f)(2) and Chemical Code Number

Not listed.

Drug Enforcement Administration (DEA). List 1 & 2 Exempt Chemical Mixtures (21 CFR 1310.12(c))

IODINE (CAS 7553-56-2) 2.2 %WV

DEA Exempt Chemical Mixtures Code Number

IODINE (CAS 7553-56-2) 6699

Food and Drug Administration (FDA) Not regulated.

US state regulations

WARNING: This product contains a chemical known to the State of California to cause cancer and birth defects or other reproductive harm.

US. Massachusetts RTK - Substance List

ETHYLENEGLYCOLMONOMETHYL ETHER (CAS 109-86-4)
IODINE (CAS 7553-56-2)
PYRIDINE (CAS 110-86-1)
SULFUR DIOXIDE (CAS 7446-09-5)

US. New Jersey Worker and Community Right-to-Know Act

ETHYLENEGLYCOLMONOMETHYL ETHER (CAS 109-86-4) 500 LBS
PYRIDINE (CAS 110-86-1) 500 LBS
SULFUR DIOXIDE (CAS 7446-09-5) 500 LBS

US. Pennsylvania RTK - Hazardous Substances

ETHYLENEGLYCOLMONOMETHYL ETHER (CAS 109-86-4)
IODINE (CAS 7553-56-2)
PYRIDINE (CAS 110-86-1)
SULFUR DIOXIDE (CAS 7446-09-5)

US. Rhode Island RTK

ETHYLENEGLYCOLMONOMETHYL ETHER (CAS 109-86-4)
PYRIDINE (CAS 110-86-1)
SULFUR DIOXIDE (CAS 7446-09-5)

US. California Proposition 65

US - California Proposition 65 - Carcinogens & Reproductive Toxicity (CRT): Listed substance

ETHYLENEGLYCOLMONOMETHYL ETHER (CAS 109-86-4)
PYRIDINE (CAS 110-86-1)
SULFUR DIOXIDE (CAS 7446-09-5)

International Inventories

Country(s) or region	Inventory name	On inventory (yes/no)*
Australia	Australian Inventory of Chemical Substances (AICS)	Yes
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	No
China	Inventory of Existing Chemical Substances in China (IECSC)	Yes
Europe	European Inventory of Existing Commercial Chemical Substances (EINECS)	Yes
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	No
Korea	Existing Chemicals List (ECL)	Yes
New Zealand	New Zealand Inventory	Yes
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	Yes
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

*A "Yes" indicates this product complies with the inventory requirements administered by the governing country(s)

16. Other information, including date of preparation or last revision

Issue date May-14-2014

Version # 01

Further information Not available.

Disclaimer The information in the sheet was written based on the best knowledge and experience currently available. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

Revision Information Product and Company Identification: Alternate Trade Names
Hazards Identification: US Hazard Categories
Composition / Information on Ingredients: Ingredients
Physical & Chemical Properties: Multiple Properties
Transport Information: Proper Shipping Name/Packing Group
Regulatory Information: Canada