Post Apple Scientific, inc
8893 Gulf Rd
North East, PA 16428

SAFETY DATA SHEET

Revision Date 21-May-2014 **Revision Number** 1

1. Identification

Product Name **Bromophenol Blue Solution 0.04%**

Cat No. : **C2240**

Synonyms 3`,3`,5`,5`-Tetrabromophenolsulfonphthalein Sodium Salt Solution

Recommended Use Laboratory chemicals.

Uses advised against No Information available

Details of the supplier of the safety data sheet

Company
Post Apple Scientific, inc.
8893 Gulf Rd
North East, PA 16428
Tel: 814-725-3330

Emergency Telephone Number
CHEMTREC®, Inside the USA: 800-424-9300
CHEMTREC®, Outside the USA: 001-703-527-3887

2. Hazard(s) identification

Classification
This chemical is not considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Based on available data, the classification criteria are not met

Label Elements
None required

Hazards not otherwise classified (HNOC)
None identified

3. Composition / information on ingredients

Component	CAS-No	Weight %
Water	7732-18-5	99.96
Phenol, 4,4'-(3H-1,2-benzoxathiol-3-ylidene)bis[2,6-dibromo-, S,S-dioxide, monosodium salt	62625-28-9	0.04

4. First-aid measures

Eye Contact Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Obtain medical attention.

Skin Contact Wash off immediately with plenty of water for at least 15 minutes. Obtain medical attention.

Inhalation Move to fresh air. If breathing is difficult, give oxygen. Obtain medical attention.

Ingestion Do not induce vomiting. Obtain medical attention.

Most important symptoms/effects No information available.
Notes to Physician Treat symptomatically

5. Fire-fighting measures

Unsuitable Extinguishing Media No information available

Flash Point
Method - No information available

Autoignition Temperature No information available
Explosion Limits
Upper No data available
Lower No data available
Sensitivity to Mechanical Impact No information available
Sensitivity to Static Discharge No information available

Specific Hazards Arising from the Chemical
Keep product and empty container away from heat and sources of ignition.

Hazardous Combustion Products
None under normal use conditions
Protective Equipment and Precautions for Firefighters
As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

NFPA

Health	Flammability	Instability	Physical hazards
1	0	0	N/A

6. Accidental release measures

Personal Precautions Use personal protective equipment. Ensure adequate ventilation.
Environmental Precautions Should not be released into the environment.

Methods for Containment and Clean Up Soak up with inert absorbent material.

7. Handling and storage

Handling Ensure adequate ventilation. Wash hands before breaks and immediately after handling the product. Avoid contact with skin, eyes and clothing. Avoid ingestion and inhalation.

Storage Keep containers tightly closed in a cool, well-ventilated place.

8. Exposure controls / personal protection

Exposure Guidelines This product does not contain any hazardous materials with occupational exposure limits established by the region specific regulatory bodies.

Engineering Measures Ensure adequate ventilation, especially in confined areas.

Personal Protective Equipment

Eye/face Protection 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 and body protection Wear appropriate protective gloves and clothing to prevent skin exposure.

Respiratory Protection 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.

Hygiene Measures Handle in accordance with good industrial hygiene and safety practice.

9. Physical and chemical properties

Physical State	Liquid
Appearance	Blue
Odor	Odorless
Odor Threshold	No information available
pH	
Melting Point/Range	No data available
Boiling Point/Range	> °C
Flash Point	
Evaporation Rate	No information available
Flammability (solid,gas)	No information available
Flammability or explosive limits	
Upper	No data available
Lower	No data available
Vapor Pressure	No information available
Vapor Density	> 1.0
Relative Density	No information available
Solubility	Soluble in water
Partition coefficient; n-octanol/water	No data available
Autoignition Temperature	No information available
Decomposition temperature	No information available
Viscosity	No information available

10. Stability and reactivity

Reactive Hazard None known, based on information available

Stability Stable under normal conditions.

Conditions to Avoid Incompatible products.

Incompatible Materials Strong oxidizing agents

Hazardous Decomposition Products None under normal use conditions

Hazardous Polymerization Hazardous polymerization does not occur.

Hazardous Reactions None under normal processing.

11. Toxicological information

Acute Toxicity

Component Information

Component	LD50 Oral	LD50 Dermal	LC50 Inhalation
Water	-	-	-

Toxicologically Synergistic Products No information available

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Irritation May cause irritation

Sensitization No information available

Carcinogenicity The table below indicates whether each agency has listed any ingredient as a carcinogen.

Component	CAS-No	IARC	NTP	ACGIH	OSHA	Mexico
Water	7732-18-5	Not listed	Not listed	Not listed	Not listed	Not listed
Phenol, 4,4'-(3H-1,2-benzoxathiol-3-ylidene)bis[2,6-dibromo-, S,S-dioxide, monosodium salt	62625-28-9	Not listed	Not listed	Not listed	Not listed	Not listed

Mutagenic Effects No information available

Reproductive Effects No information available.

Developmental Effects No information available.

Teratogenicity No information available.

STOT - single exposure None known
STOT - repeated exposure None known

Aspiration hazard No information available

Symptoms / effects, both acute and delayed No information available

Endocrine Disruptor Information No information available

Other Adverse Effects The toxicological properties have not been fully investigated.

12. Ecological information

Ecotoxicity
Do not empty into drains.

Persistence and Degradability No information available

Bioaccumulation/ Accumulation No information available.

Mobility No information available.

13. Disposal considerations

Waste Disposal Methods Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. Chemical waste generators must also consult local, regional, and national hazardous waste regulations to ensure complete and accurate classification.

14. Transport information

DOT Not regulated
TDG Not regulated
IATA Not regulated
IMDG/IMO Not regulated

15. Regulatory information

International Inventories

Component	TSCA	DSL	NDSL	EINECS	ELINCS	NLP	PICCS	ENCS	AICS	IECSC	KECL
Water	X	X	-	231-791-2	-		X	-	X	X	X
Phenol, 4,4'-(3H-1,2-benzoxathiol-3-yl idene)bis[2,6-dibromo-, S,S-dioxide, monosodium salt	X	X	-	263-653-2	-		X	-	-	X	-

Legend:
X - Listed
E - Indicates a substance that is the subject of a Section 5(e) Consent order under TSCA.
F - Indicates a substance that is the subject of a Section 5(f) Rule under TSCA.
N - Indicates a polymeric substance containing no free-radical initiator in its inventory name but is considered to cover the designated polymer made with any free-radical initiator regardless of the amount used.
P - Indicates a commenced PMN substance
R - Indicates a substance that is the subject of a Section 6 risk management rule under TSCA.
S - Indicates a substance that is identified in a proposed or final Significant New Use Rule
T - Indicates a substance that is the subject of a Section 4 test rule under TSCA.
XU - Indicates a substance exempt from reporting under the Inventory Update Rule, i.e. Partial Updating of the TSCA Inventory Data Base Production and Site Reports (40 CFR 710(B).
Y1 - Indicates an exempt polymer that has a number-average molecular weight of 1,000 or greater.
Y2 - Indicates an exempt polymer that is a polyester and is made only from reactants included in a specified list of low concern reactants that comprises one of the eligibility criteria for the exemption rule.

U.S. Federal Regulations

TSCA 12(b) Not applicable

SARA 313 Not applicable

SARA 311/312 Hazardous Categorization

Acute Health Hazard	No
Chronic Health Hazard	No
Fire Hazard	No
Sudden Release of Pressure Hazard	No
Reactive Hazard	No

Clean Water Act Not applicable

Clean Air Act Not applicable

OSHA Occupational Safety and Health Administration
Not applicable

CERCLA
Not applicable

California Proposition 65 This product does not contain any Proposition 65 chemicals

State Right-to-Know Not applicable

U.S. Department of Transportation

Reportable Quantity (RQ):	N
DOT Marine Pollutant	N
DOT Severe Marine Pollutant	N

U.S. Department of Homeland Security
This product does not contain any DHS chemicals.

Other International Regulations

Mexico - Grade No information available

Canada
This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all the information required by the CPR

WHMIS Hazard Class Non-controlled

16. Other information

Prepared By
Regulatory Affairs
Post Apple Scientific, inc.
Email: gordon@postapplescientific.com

Revision Date 21-May-2014
Print Date 21-May-2014
Revision Summary This document has been updated to comply with the US OSHA HazCom 2012 Standard replacing the current legislation under 29 CFR 1910.1200 to align with the Globally Harmonized System of Classification and Labeling of Chemicals (GHS)

Disclaimer
The information provided on this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guide for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered as 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 material or in any process, unless specified in the text.

End of SDS

Post Apple Scientific, Inc.
8893 Gulf Rd., North East, PA 16428-4298
Emergency Phone Number: 1-800/424-9300

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

MSDS Name: Ethyl Alcohol, Denatured
Catalog Numbers: C3695, C3700, C3710
Synonyms:
Ethanol denatured, grain alcohol denatured, ethyl hydroxide denatured, ethyl hydrate denatured, algarin denatured

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

CAS#	Chemical Name	%	EINECS#
64-17-5	Ethyl Alcohol	85.4-92.	200-578-6
67-56-1	Methyl alcohol	3.6	200-659-6
67-63-0	Isopropyl alcohol	25 ppm	200-661-7
67-64-1	Acetone	2 ppm	200-662-2
71-43-2	Benzene	trace	200-753-7

75-07-0	Acetaldehyde	10 ppm	200-836-8
108-10-1	Methyl isobutyl ketone	1.9	203-550-1
108-88-3	Toluene	0.80%	203-625-9
141-78-6	Ethyl acetate	1.3	205-500-4
7732-18-5	Water	5.0%	231-791-2
64742-89-8	Solvent naphtha (petroleum), light aliphatic	0.72-0.7	265-192-2
308082-09-9	Gasoline, aviation	1	unlisted

Hazard Symbols: F
Risk Phrases: 11

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

EMERGENCY OVERVIEW

Appearance: clear, colorless. Flash Point: 13 deg C.
Danger! May cause skin irritation. Flammable liquid. May cause central nervous system depression. May be absorbed through intact skin. Causes severe eye irritation. May cause liver and kidney damage. May cause reproductive and fetal effects.
Target Organs: Kidneys, central nervous system, liver.

Potential Health Effects

Eye:

Produces irritation, characterized by a burning sensation, redness tearing, inflammation, and possible corneal injury. May cause painful sensitization to light. Vapors may cause eye irritation.

Skin:

May cause skin irritation. Prolonged and/or repeated contact may cause defatting of the skin and dermatitis. May be absorbed throug the skin.

Ingestion:

May cause systemic toxicity with acidosis. May cause liver and kidney damage. May cause central nervous system depression, characterized by excitement, followed by headache, dizziness, drowsiness, and nausea. Advanced stages may cause collapse, unconsciousness, coma and possible death due to respiratory failure.

Inhalation:

Inhalation of high concentrations may cause central nervous system effects characterized by nausea, headache, dizziness, unconsciousness and coma. May cause respiratory tract irritation. May cause effect similar to those described for ingestion. May cause drowsiness, unconsciousness, and central nervous system depression.

Chronic:

Chronic inhalation and ingestion may cause effects similar to thos of acute inhalation and ingestion. Prolonged or repeated skin contact may cause defatting and dermatitis. Prolonged or repeated exposure may cause adverse reproductive effects. May cause fetal effects.

**** 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 flush skin with plenty of soap and water for at least 15 minutes while removing contaminated clothing and shoes.

Ingestion:

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. Induce vomiting by giving one teaspoon of Syrup of Ipecac.

Inhalation:

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

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. Vapors may form an explosive mixture with air. Vapors can travel to a source of ignition and flash back. Use wate spray to keep fire-exposed containers cool. Containers may explode in the heat of a fire. Flammable liquid and vapor. May form explosive peroxides. Vapors may be heavier than air. They can spread along the ground and collect in low or confined areas.

Extinguishing Media:
In case of fire, use water, dry chemical, chemical foam, or alcohol-resistant foam. Use water spray to cool fire-exposed containers. Water may be ineffective. Do NOT use straight streams of water. For large fires, use dry chemical, carbon dioxide, alcohol-resistant foam, or water spray. Cool containers with flooding quantities of water until well after fire is out.

Autoignition Temperature:363 deg C (685.40 deg F)
Flash Point: 16.66 deg C (61.99 deg F)
Explosion Limits, lower:3.3 (ethanol)
Explosion Limits, upper:19 (ethanol)
NFPA Rating: (estimated) Health: 1; Flammability: 3; Reactivity: 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. Remove all sources of ignition. vapor suppressing foam may be used to reduce vapors.

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

Handling:
Wash thoroughly after handling. Use with adequate ventilation. Ground and bond containers when transferring material. 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. Avoid ingestion and inhalation. Do not pressurize, cut, weld, braze,

solder, drill, grind, or expose empty containers to heat, sparks o
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:

Use adequate general or local exhaust ventilation to keep airborne concentrations below the permissible exposure limits.

Exposure Limits

Chemical Name	ACGIH	NIOSH	OSHA - Final PELs
Ethyl Alcohol	1000 ppm	1000 ppm TWA; 1900 mg/m3 TWA 3300 ppm IDLH (10 percent lower explosive limit)	1000 ppm TWA; 1900 mg/m3 TWA
Methyl alcohol	200 ppm; 250 ppm STEL; skin - potential for cutaneous absorption	200 ppm TWA; 260 mg/m3 TWA 6000 ppm IDLH	200 ppm TWA; 260 mg/m3 TWA
Isopropyl alcohol	(400 ppm); (500ppm) STEL	400 ppm TWA; 980 mg/m3 TWA 2000	400 ppm TWA; 980 mg/m3 TWA

		ppm IDLH (10 percent lower explosive limit)	
Acetone	500 ppm; 750 ppm STEL	250 ppm TWA; 590 mg/m3 TWA 2500 ppm IDLH (10 percent lower explosive level)	1000 ppm TWA; 2400 mg/m3 TWA
Benzene	0.5 ppm; 2.5 ppm STEL; skin - potential for cutaneous absorption	0.1 ppm TWA; NIOSH Potential Occupational Carcinogen - see Appendix A Potential NIOSH carcinogen.	10 ppm TWA (apply only t exempt industry segments); C 25 ppm; 1 ppm TWA; 0.5 ppm TWA actic limit; Cancer hazard; Flammable (se 2 9 CFR 1910.1028)
Acetaldehyde	C 25 ppm	NIOSH Potential Carcinogen - see	200 ppm TWA; 360 mg/m3 TWA

		Appendix A; see Appendix C (Aldehydes) for supplementary exposure limits; Potential NIOSH carcinogen.	
Methyl isobutyl ketone	50 ppm; 75 ppm STEL	50 ppm TWA; 205 mg/m3 TWA 500 ppm IDLH	100 ppm TWA; 410 mg/m3 TWA
Toluene	50 ppm; skin - potential for cutaneous absorption	100 ppm TWA; 375 mg/m3 TWA 500 ppm IDLH	200 ppm TWA; 300 ppm; C 30 ppm
Ethyl acetate	400 ppm	400 ppm TWA; 1400 mg/m3 TWA 2000 ppm IDLH (10 percent lower explosive limit)	400 ppm TWA; 1400 mg/m3 TW
Water	none listed	none listed	none listed

Solvent naphtha (petroleum), light aliphatic	none listed	none listed	none listed
Gasoline, aviation	none listed	none listed	none listed

OSHA Vacated PELs:

Ethyl Alcohol:
1000 ppm TWA; 1900 mg/m3 TWA
Methyl alcohol:
200 ppm TWA; 260 mg/m3 TWA; 250 ppm STEL; 325 mg/m3 STEL
Isopropyl alcohol:
400 ppm TWA; 980 mg/m3 TWA; 500 ppm STEL; 1225 mg/m3 STEL
Acetone:
750 ppm TWA; 1800 mg/m3 TWA; 1000 ppm STEL; 2400 mg/m3 STEL (The acetone STEL does not apply to the cellulose
Benzene:
10 ppm TWA (unless specified in 1910.1028); 50 ppm STEL (10 min) (unless specified in 1910.1028); C 25 ppm (unless specified in 1910.1028)
Acetaldehyde:
100 ppm TWA; 180 mg/m3 TWA; 150 ppm STEL; 270 mg/m3 STEL
Methyl isobutyl ketone:
50 ppm TWA; 205 mg/m3 TWA; 75 ppm STEL; 300 mg/m3 STEL
Toluene:
100 ppm TWA; 375 mg/m3 TWA; 150 ppm STEL; 560 mg/m3 STEL
Ethyl acetate:
400 ppm TWA; 1400 mg/m3 TWA
Water:
No OSHA Vacated PELs are listed for this chemical.
Solvent naphtha (petroleum), light aliphatic:
No OSHA Vacated PELs are listed for this chemical.
Gasoline, aviation:
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 Europear 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 29CFF 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:	Liquid
Appearance:	clear, colorless
Odor:	aromatic odor
pH:	No data
Vapor Pressure:	25 mm Hg
Vapor Density:	1.6 (ethanol)
Evaporation Rate:	2.0
Viscosity:	Not available.
Boiling Point:	173.3 deg F
Freezing/Melting Point:	-90 deg C
Decomposition Temperature:	Not available.
Solubility in water:	Soluble in water.
Specific Gravity/Density:	0.7905
Molecular Formula:	Mixture.
Molecular Weight:	Not available.

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

Chemical Stability:

Stable. This material may be sensitive to peroxide formation.

Conditions to Avoid:

This material may be sensitive to peroxide formation., incompatibl materials, ignition sources.

Incompatibilities with Other Materials:

Isopropanol is susceptible to autoxidation and therefore should be classified as peroxidizable., acids (mineral, non-oxidizing, e.g. hydrochloric acid, hydrofluoric acid, muriatic acid, phosphoric acid), acids (mineral, oxidizing, e.g. chromic acid, hypochlorous acid, nitric acid, sulfuric acid), acids (organic, e.g. acetic acid,

benzoic acid, formic acid, methanoic acid, oxalic acid), azo, diazo,
and hydrazines (e.g. dimethyl hydrazine, hydrazine, methyl hydrazine), isocyanates (e.g. methyl isocyanate), metals (alkali and alkaline, e.g. cesium, potassium, sodium), nitrides (e.g. potassiu nitride, sodium nitride), peroxides and hydroperoxides (organic, e.g. acetyl peroxide, benzoyl peroxide, butyl peroxide, methyl ethyl ketone peroxide), epoxides (e.g. butyl glycidyl ether), oxidizing agents (strong, e.g. bromine, hydrogen peroxide, nitrogen dioxide, potassium nitrate), reducing agents (strong, e.g. aluminum carbide chlorosilane, hydrogen phosphide, lithium hydride), water reactive substances (e.g. acetic anyhdride, alkyl aluminum chloride, calciu carbide, ethyl dichlorosilane).

Hazardous Decomposition Products:
Carbon monoxide, carbon dioxide.

Hazardous Polymerization: Has not been reported.

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

RTECS#:
CAS# 64-17-5: KQ6300000
CAS# 67-56-1: PC1400000
CAS# 67-63-0: NT8050000
CAS# 67-64-1: AL3150000
CAS# 71-43-2: CY1400000
CAS# 75-07-0: AB1925000
CAS# 108-10-1: SA9275000
CAS# 108-88-3: XS5250000
CAS# 141-78-6: AH5425000
CAS# 7732-18-5: ZC0110000
CAS# 64742-89-8 unlisted.
CAS# 308082-09-9 unlisted.

LD50/LC50:
CAS# 64-17-5: Draize test, rabbit, eye: 500 mg Severe; Draize test rabbit, eye: 500 mg/24H Mild; Draize test, rabbit, skin: 20 mg/24H Moderate; Inhalation, mouse: LC50 = 39 gm/m3/4H; Inhalation, rat: LC50 = 20000 ppm/10H; Oral, mouse: LD50 = 3450 mg/kg; Oral, rabbit LD50 = 6300 mg/kg; Oral, rat: LD50 = 7060 mg/kg.
CAS# 67-56-1: Draize test, rabbit, eye: 40 mg Moderate; Draize test, rabbit, eye: 100 mg/24H Moderate; Draize test, rabbit, skin: 20 mg/24H Moderate; Inhalation, rat: LC50 = 64000 ppm/4H; Oral, mouse LD50 = 7300 mg/kg; Oral, rabbit: LD50 = 14200 mg/kg; Oral, rat: LD50 = 5628 mg/kg; Skin, rabbit: LD50 = 15800 mg/kg.
CAS# 67-63-0: Draize test, rabbit, eye: 100 mg Severe; Draize test

rabbit, eye: 10 mg Moderate; Draize test, rabbit, eye: 100 mg/24H Moderate; Draize test, rabbit, skin: 500 mg Mild; Inhalation, rat: LC50 = 16000 ppm/8H; Oral, mouse: LD50 = 3600 mg/kg; Oral, rabbit: LD50 = 6410 mg/kg; Oral, rat: LD50 = 5045 mg/kg; Skin, rabbit: LD5 = 12800 mg/kg.

CAS# 67-64-1: Dermal, guinea pig: LD50 = >9400 uL/kg; Draize test, rabbit, eye: 20 mg Severe; Draize test, rabbit, eye: 20 mg/24H Moderate; Draize test, rabbit, skin: 500 mg/24H Mild; Inhalation, mouse: LC50 = 44 gm/m3/4H; Inhalation, rat: LC50 = 50100 mg/m3/8H; Oral, mouse: LD50 = 3 gm/kg; Oral, rabbit: LD50 = 5340 mg/kg; Oral rat: LD50 = 5800 mg/kg.

CAS# 71-43-2: Dermal, guinea pig: LD50 = >9400 uL/kg; Draize test, rabbit, eye: 88 mg Moderate; Draize test, rabbit, eye: 2 mg/24H Severe; Draize test, rabbit, skin: 20 mg/24H Moderate; Inhalation, mouse: LC50 = 9980 ppm; Inhalation, rat: LC50 = 10000 ppm/7H; Oral mouse: LD50 = 4700 mg/kg; Oral, rat: LD50 = 930 mg/kg; Skin, rabbit:

LD50 = >9400 uL/kg.

CAS# 75-07-0: Draize test, rabbit, eye: 40 mg Severe; Inhalation, mouse: LC50 = 23 gm/m3/4H; Inhalation, rat: LC50 = 13300 ppm/4H; Oral, mouse: LD50 = 900 mg/kg; Oral, rat: LD50 = 661 mg/kg; Skin, rabbit: LD50 = 3540 mg/kg.

CAS# 108-10-1: Draize test, rabbit, eye: 40 mg Severe; Draize test rabbit, eye: 100 uL/24H Moderate; Draize test, rabbit, skin: 500 mg/24H Mild; Inhalation, mouse: LC50 = 23300 mg/m3; Inhalation, rat:

LC50 = 100 gm/m3; Oral, mouse: LD50 = 1900 mg/kg; Oral, rat: LD50 2080 mg/kg.

CAS# 108-88-3: Draize test, rabbit, eye: 870 ug Mild; Draize test, rabbit, eye: 2 mg/24H Severe; Draize test, rabbit, skin: 435 mg Mild;

Draize test, rabbit, skin: 500 mg Moderate; Draize test, rabbit, skin: 20 mg/24H Moderate; Inhalation, mouse: LC50 = 400 ppm/24H; Inhalation, rat: LC50 = 49 gm/m3/4H; Oral, rat: LD50 = 636 mg/kg; Skin, rabbit: LD50 = 14100 uL/kg.

CAS# 141-78-6: Inhalation, mouse: LC50 = 45 gm/m3/2H; Inhalation, rat: LC50 = 200 gm/m3; Oral, mouse: LD50 = 4100 mg/kg; Oral, rabbit:

LD50 = 4935 mg/kg; Oral, rat: LD50 = 5620 mg/kg; Skin, rabbit: LD5 =

>20 mL/kg.

CAS# 7732-18-5: Oral, rat: LD50 = >90 mL/kg.

CAS# 64742-89-8.

CAS# 308082-09-9.

Carcinogenicity:

Ethyl Alcohol -

ACGIH: A4 - Not Classifiable as a Human Carcinogen

Methyl alcohol -

Not listed by ACGIH, IARC, NIOSH, NTP, or OSHA.
Isopropyl alcohol -
IARC: Group 3 carcinogen
Acetone -
ACGIH: A4 - Not Classifiable as a Human Carcinogen
Benzene -
ACGIH: A1 - Confirmed Human Carcinogen
California: carcinogen; initial date 2/27/87
NIOSH: occupational carcinogen
NTP: Known carcinogen
OSHA: Select carcinogen
IARC: Group 1 carcinogen
Acetaldehyde -
ACGIH: A3 - Animal Carcinogen
California: carcinogen; initial date 4/1/88
NIOSH: occupational carcinogen
NTP: Suspect carcinogen
OSHA: Possible Select carcinogen
IARC: Group 2B carcinogen
Methyl isobutyl ketone -
Not listed by ACGIH, IARC, NIOSH, NTP, or OSHA.
Toluene -
ACGIH: A4 - Not Classifiable as a Human Carcinogen
IARC: Group 3 carcinogen
Ethyl acetate -
Not listed by ACGIH, IARC, NIOSH, NTP, or OSHA.
Water -
Not listed by ACGIH, IARC, NIOSH, NTP, or OSHA.
Solvent naphtha (petroleum), light aliphatic -
Not listed by ACGIH, IARC, NIOSH, NTP, or OSHA.
Gasoline, aviation -
Not listed by ACGIH, IARC, NIOSH, NTP, or OSHA.
Epidemiology:
No data available.
Teratogenicity:
No data available.
Reproductive Effects:
Prenatal exposure to ethanol is associated with a distinct patterr
of
congenital malformations that have been collectively termed the
fetal
alcohol syndrome. Among the characteristics of this syndrome are
intrauterine and postnatal growth deficiency, a distinctive patter
of physical malformation, and behavioral/cognitive impairment such
as fine motor dysfunction and metal retardation. Not all affected
children have all of the features of the syndrome. This syndrome
has
been associated with alcoholic women who drank heavily and

chronically during pregnancy

Neurotoxicity:

No data available.

Mutagenicity:

No data available.

Other Studies:

No data available.

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

Ecotoxicity:

250 ppm/6hr/goldfish/lethal/fresh water

**** 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: CAS# 67-56-1: waste number U154;
(Ignitable waste). CAS# 67-64-1: waste number U002;
(Ignitable waste). CAS# 71-43-2: waste number U019;
(Ignitable waste, Toxic waste). CAS# 75-07-0: waste

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

US DOT

Shipping Name: ETHANOL SOLUTIONS
Hazard Class: 3
UN Number: UN1170
Packing Group: II

Canadian TDG

Shipping Name: ALCOHOLS TOXIC NOS (ETHANOL,METHANOL MIXTURE)
Hazard Class: 3(6.1)
UN Number: UN1986
Other Information: FP 18C

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

US FEDERAL

TSCA

CAS# 64-17-5 is listed on the TSCA inventory.
CAS# 67-56-1 is listed on the TSCA inventory.
CAS# 67-63-0 is listed on the TSCA inventory.
CAS# 67-64-1 is listed on the TSCA inventory.

CAS# 71-43-2 is listed on the TSCA inventory.
CAS# 75-07-0 is listed on the TSCA inventory.
CAS# 108-10-1 is listed on the TSCA inventory.
CAS# 108-88-3 is listed on the TSCA inventory.
CAS# 141-78-6 is listed on the TSCA inventory.
CAS# 7732-18-5 is listed on the TSCA inventory.
CAS# 64742-89-8 is listed on the TSCA inventory.
CAS# 308082-09-9 is not listed on the TSCA inventory.
It is for research and development use only.
Health & Safety Reporting List
CAS# 67-63-0: Effective Date: December 15, 1986; Sunset Date: December
15, 1996
CAS# 108-10-1: Effective Date: October 4, 1982; Sunset Date: October 4
, 1992
CAS# 108-88-3: Effective Date: October 4, 1982; Sunset Date: October 4
, 1992
Chemical Test Rules
CAS# 67-63-0: Testing required by: manufacturers; importers; processor
Section 12b
CAS# 67-63-0: 4/12b
CAS# 67-64-1: 4/12b
CAS# 108-10-1: 4/12b
CAS# 141-78-6: 4/12b
TSCA Significant New Use Rule
None of the chemicals in this material have a SNUR under TSCA.
SARA
Section 302 (RQ)
CAS# 67-56-1: final RQ = 5000 pounds (2270 kg)
CAS# 67-64-1: final RQ = 5000 pounds (2270 kg)
CAS# 71-43-2: final RQ = 10 pounds (4.54 kg); receives an adjustable R
CAS# 75-07-0: final RQ = 1000 pounds (454 kg)
CAS# 108-10-1: final RQ = 5000 pounds (2270 kg)
CAS# 108-88-3: final RQ = 1000 pounds (454 kg)
CAS# 141-78-6: final RQ = 5000 pounds (2270 kg)
Section 302 (TPQ)
None of the chemicals in this product have a TPQ.
SARA Codes
CAS # 64-17-5: acute, chronic, flammable.
CAS # 67-56-1: acute, flammable.
CAS # 67-63-0: acute, chronic, flammable.
CAS # 67-64-1: acute, chronic, flammable, sudden release of pressure.
CAS # 71-43-2: acute, chronic, flammable.

CAS # 75-07-0: acute, chronic, flammable, reactive.
CAS # 108-10-1: acute, chronic, flammable, reactive.
CAS # 108-88-3: acute, flammable.
CAS # 141-78-6: flammable.

Section 313

This material contains Methyl alcohol (CAS# 67-56-1, 3 6%),which i
subject to the reporting requirements of Section 313 of SARA Title
III and 40 CFR Part 372.
This material contains Isopropyl alcohol (CAS# 67-63-0, 25%),which
is
subject to the reporting requirements of Section 313 of SARA Title
III and 40 CFR Part 372.
This chemical is not at a high enough concentration to be
reportable
under Section 313.
This material contains Acetaldehyde (CAS# 75-07-0, 10%),which is
subject to the reporting requirements of Section 313 of SARA Title
III and 40 CFR Part 372.
This material contains Methyl isobutyl ketone (CAS# 108-10-1, 1
9%),which is subject to the reporting requirements of Section 313
of
SARA Title III and 40 CFR Part 372.
This chemical is not at a high enough concentration to be
reportable
under Section 313.

Clean Air Act:

CAS# 67-56-1 is listed as a hazardous air pollutant (HAP).
CAS# 71-43-2 is listed as a hazardous air pollutant (HAP).
CAS# 75-07-0 is listed as a hazardous air pollutant (HAP).
CAS# 108-10-1 is listed as a hazardous air pollutant (HAP).
CAS# 108-88-3 is listed as a hazardous air pollutant (HAP).
This material does not contain any Class 1 Ozone depletors.
This material does not contain any Class 2 Ozone depletors.

Clean Water Act:

CAS# 71-43-2 is listed as a Hazardous Substance under the CWA.
CAS# 75-07-0 is listed as a Hazardous Substance under the CWA.
CAS# 108-88-3 is listed as a Hazardous Substance under the CWA.
CAS# 71-43-2 is listed as a Priority Pollutant under the Clean
Water
Act.
CAS# 108-88-3 is listed as a Priority Pollutant under the Clean
Water
Act.
CAS# 71-43-2 is listed as a Toxic Pollutant under the Clean Water
Act.
CAS# 108-88-3 is listed as a Toxic Pollutant under the Clean Water
Act.

OSHA:

CAS# 75-07-0 is considered highly hazardous by OSHA.

STATE

Ethyl Alcohol can be found on the following state right to know lists: California, New Jersey, Florida, Pennsylvania, Minnesota, Massachusetts.

Methyl alcohol can be found on the following state right to know lists: California, New Jersey, Florida, Pennsylvania, Minnesota, Massachusetts.

Isopropyl alcohol can be found on the following state right to know lists: California, New Jersey, Florida, Pennsylvania, Minnesota, Massachusetts.

Acetone can be found on the following state right to know lists: California, New Jersey, Florida, Pennsylvania, Minnesota, Massachusetts.

Benzene can be found on the following state right to know lists: California, New Jersey, Florida, Pennsylvania, Minnesota, Massachusetts.

Acetaldehyde can be found on the following state right to know lists: California, New Jersey, Florida, Pennsylvania, Minnesota, Massachusetts.

Methyl isobutyl ketone can be found on the following state right to know lists: California, New Jersey, Florida, Pennsylvania, Minnesota, Massachusetts.

Toluene can be found on the following state right to know lists: California, New Jersey, Florida, Pennsylvania, Minnesota, Massachusetts.

Ethyl acetate can be found on the following state right to know lists: California, New Jersey, Florida, Pennsylvania, Minnesota, Massachusetts.

Water is not present on state lists from CA, PA, MN, MA, FL, or NJ.

Solvent naphtha (petroleum), light aliphatic is not present on state lists from CA, PA, MN, MA, FL, or NJ.

Gasoline, aviation is not present on state lists from CA, PA, MN, MA, FL, or NJ.

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

WARNING: This product contains Benzene, a chemical known to the state of California to cause birth defects or other reproductive harm.

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

WARNING: This product contains Ethyl Alcohol, a chemical known to the state of California to cause birth defects or other reproductive harm.

California No Significant Risk Level:

CAS# 71-43-2: no significant risk level = 7 ug/day

CAS# 75-07-0: no significant risk level = 90 ug/day (inhalation)

CAS# 108-88-3: NOEL = 7000 ug/day

European/International Regulations

European Labeling in Accordance with EC Directives

Hazard Symbols: F

Risk Phrases:

R 11 Highly flammable.

Safety Phrases:

S 2 Keep out of reach of children.

S 7 Keep container tightly closed.

S 16 Keep away from sources of ignition - No smoking.

WGK (Water Danger/Protection)

CAS# 64-17-5: 0

CAS# 67-56-1: 1

CAS# 67-63-0: 1

CAS# 67-64-1: 0

CAS# 71-43-2: 3

CAS# 75-07-0: 1

CAS# 108-10-1: 1

CAS# 108-88-3: 2

CAS# 141-78-6: 1

CAS# 7732-18-5: No information available.

CAS# 64742-89-8: No information available.

CAS# 308082-09-9: No information available.

United Kingdom Occupational Exposure Limits

CAS# 64-17-5: OES-United Kingdom, TWA 1000 ppm TWA; 1920 mg/m3 TWA

CAS# 67-56-1: OES-United Kingdom, TWA 200 ppm TWA; 266 mg/m3 TWA

CAS# 67-56-1: OES-United Kingdom, STEL 250 ppm STEL; 333 mg/m3 STEL

CAS# 67-63-0: OES-United Kingdom, TWA 400 ppm TWA; 999 mg/m3 TWA

CAS# 67-63-0: OES-United Kingdom, STEL 500 ppm STEL; 1250 mg/m3 STEL

CAS# 67-64-1: OES-United Kingdom, TWA 750 ppm TWA; 1810 mg/m3 TWA

CAS# 67-64-1: OES-United Kingdom, STEL 1500 ppm STEL; 3620 mg/m3 STEL

Canada

CAS# 64-17-5 is listed on Canada's DSL List.

CAS# 67-56-1 is listed on Canada's DSL List.

CAS# 67-63-0 is listed on Canada's DSL List.

CAS# 67-64-1 is listed on Canada's DSL List.

CAS# 71-43-2 is listed on Canada's DSL List.

CAS# 75-07-0 is listed on Canada's DSL List.

CAS# 108-10-1 is listed on Canada's DSL List.

CAS# 108-88-3 is listed on Canada's DSL List.

CAS# 141-78-6 is listed on Canada's DSL List.

CAS# 7732-18-5 is listed on Canada's DSL List.

CAS# 64742-89-8 is listed on Canada's DSL List.

This product has a WHMIS classification of B2, D1A, D2B.

CAS# 64-17-5 is listed on Canada's Ingredient Disclosure List.

CAS# 67-56-1 is listed on Canada's Ingredient Disclosure List.

CAS# 67-63-0 is listed on Canada's Ingredient Disclosure List.
CAS# 67-64-1 is listed on Canada's Ingredient Disclosure List.
CAS# 71-43-2 is listed on Canada's Ingredient Disclosure List.
CAS# 75-07-0 is listed on Canada's Ingredient Disclosure List.
CAS# 108-10-1 is listed on Canada's Ingredient Disclosure List.
CAS# 108-88-3 is listed on Canada's Ingredient Disclosure List.
CAS# 141-78-6 is listed on Canada's Ingredient Disclosure List.
CAS# 7732-18-5 is not listed on Canada's Ingredient Disclosure List.
CAS# 64742-89-8 is not listed on Canada's Ingredient Disclosure List.
CAS# 308082-09-9 is not listed on Canada's Ingredient Disclosure List.

Exposure Limits

CAS# 64-17-5: OEL-AUSTRALIA:TWA 1000 ppm (1900 mg/m3)
OEL-BELGIUM:TWA 1000 ppm (1880 mg/m3)
OEL-CZECHOSLOVAKIA:TWA 1000 mg/m3;STEL 5000 mg/m3
OEL-DENMARK:TWA 1000 ppm (1900 mg/m3)
OEL-FINLAND:TWA 1000 ppm (1900 mg/m3);STEL 1250 ppm (2400 mg/m3)
OEL-FRANCE:TWA 1000 ppm (1900 mg/m3);STEL 5000 pp
OEL-GERMANY:TWA 1000 ppm (1900 mg/m3)
OEL-HUNGARY:TWA 1000 mg/m3;STEL 3000 mg/m3
OEL-THE NETHERLANDS:TWA 1000 ppm (1900 mg/m3)
OEL-THE PHILIPPINES:TWA 1000 ppm (1900 mg/m3)
OEL-POLAND:TWA 1000 mg/m3
OEL-RUSSIA:STEL 1000 mg/m3
OEL-SWEDEN:TWA 1000 ppm (1900 mg/m3)
OEL-SWITZERLAND:TWA 1000 ppm (1900 mg/m3)
OEL-THAILAND:TWA 1000 ppm (1900 mg/m3)
OEL-TURKEY:TWA 1000 ppm (1900 mg/m3)
OEL-UNITED KINGDOM:TWA 1000 ppm (1900 mg/m3) JAN9
OEL IN BULGARIA, COLOMBIA, JORDAN, KOREA check ACGIH TLV
OEL IN NEW ZEALAND, SINGAPORE, VIETNAM check ACGI TLV
CAS# 67-56-1: OEL-ARAB Republic of Egypt:TWA 200 ppm (260 mg/m3);Skin
CAS# 67-63-0: OEL-AUSTRALIA:TWA 400 ppm (980 mg/m3);STEL 500 ppm (1225
mg/m3)
OEL-BELGIUM:TWA 400 ppm (985 mg/m3);STEL 500 ppm (1230 mg/m3)
OEL-DENMARK:TWA 200 ppm (490 mg/m3);Skin
OEL-FRANCE:STEL 400 ppm (980 mg/m3)
OEL-GERMANY:TWA 400 ppm (980 mg/m3)
OEL-JAPAN:STEL 400 ppm (980 mg/m3)
OEL-THE NETHERLANDS:TWA 400 ppm (980 mg/m3);Skin
OEL-THE PHILIPPINES:TWA 400 ppm (980 mg/m3)
OEL-RUSSIA:STEL 400 ppm (10 mg/m3)
OEL-SWEDEN:TWA 150 ppm (350 mg/m3);STEL 250 ppm (600 mg/m3)
OEL-SWITZERLAND:TWA 400 ppm (980 mg/m3);STEL 800 ppm

OEL-TURKEY:TWA 200 ppm (500 mg/m3)
OEL-UNITED KINGDOM:TWA 400 ppm (980 mg/m3);STEL 500 ppm;Skin
OEL IN BULGARIA, COLOMBIA, JORDAN, KOREA check ACGIH TLV
OEL IN NEW ZEALAND, SINGAPORE, VIETNAM check ACGI TLV
CAS# 67-64-1: OEL-AUSTRALIA:TWA 500 ppm (1185 mg/m3);STEL 1000 ppm
OEL-AUSTRIA:TWA 750 ppm (1780 mg/m3)
OEL-BELGIUM:TWA 750 ppm (1780 mg/m3);STEL 1000 pp
OEL-CZECHOSLOVAKIA:TWA 800 mg/m3;STEL 4000 mg/m3
OEL-DENMARK:TWA 250 ppm (600 mg/m3)
OEL-FINLAND:TWA 500 ppm (1200 mg/m3);STEL 625 ppm (1500 mg/m3)
OEL-FRANCE:TWA 750 ppm (1800 mg/m3)
OEL-GERMANY:TWA 1000 ppm (2400 mg/m3)
OEL-HUNGARY:TWA 600 mg/m3;STEL 1200 mg/m3
OEL-INDIA:TWA 750 ppm (1780 mg/m3);STEL 1000 ppm (2375 mg/m3)
OEL-JAPAN:TWA 200 ppm (470 mg/m3)
OEL-THE NETHERLANDS:TWA 750 ppm (1780 mg/m3) JAN9
OEL-THE PHILIPPINES:TWA 1000 ppm (2400 mg/m3)
OEL-POLAND:TWA 200 mg/m3
OEL-RUSSIA:TWA 200 ppm;STEL 200 mg/m3
OEL-SWEDEN:TWA 250 ppm (600 mg/m3);STEL 500 ppm (1200 mg/m3)
OEL-SWITZERLAND:TWA 750 ppm (1780 mg/m3)
OEL-TURKEY:TWA 1000 ppm (2400 mg/m3)
OEL-UNITED KINGDOM:TWA 750 ppm (1810 mg/m3);STEL 1250 ppm
OEL IN BULGARIA, COLOMBIA, JORDAN, KOREA check ACGIH TLV
OEL IN NEW ZEALAND, SINGAPORE, VIETNAM check ACGI TLV

CAS# 71-43-2: OEL-AUSTRALIA:TWA 5 ppm (16 mg/m3);Carcinogen
OEL-BELGIUM:TWA 10 ppm (32 mg/m3);Carcinogen JAN9
OEL-CZECHOSLOVAKIA:TWA 10 mg/m3;STEL 20 mg/m3
OEL-DENMARK:TWA 5 ppm (16 mg/m3);Skin;Carcinogen
OEL-FINLAND:TWA 5 ppm (15 mg/m3);STEL 10 ppm (30 mg/m3);Skin;CAR
OEL-FRANCE:TWA 5 ppm (16 mg/m3);Carcinogen
OEL-GERMANY;Skin;Carcinogen
OEL-HUNGARY:STEL 5 mg/m3;Skin;Carcinogen
OEL-INDIA:TWA 10 ppm (30 mg/m3);Carcinogen
OEL-JAPAN:TWA 10 ppm (32 mg/m3);STEL 25 ppm (80 mg/m3);CAR
OEL-THE NETHERLANDS:TWA 10 ppm (30 mg/m3);Skin
OEL-THE PHILIPPINES:TWA 25 ppm (80 mg/m3);Skin
OEL-POLAND:TWA 30 mg/m3;Skin
OEL-RUSSIA:TWA 10 ppm (5 mg/m3);STEL 25 ppm (15 mg/m3);Skin;CAR
OEL-SWEDEN:TWA 1 ppm (3 mg/m3);STEL 5 ppm (16 mg/m3);Skin;CAR
OEL-SWITZERLAND:TWA 5 ppm (16 mg/m3);Skin;Carcinogen
OEL-THAILAND:TWA 10 ppm (30 mg/m3);STEL 25 ppm (7 mg/m3)
OEL-TURKEY:TWA 20 ppm (64 mg/m3);Skin
OEL-UNITED KINGDOM:TWA 10 ppm (30 mg/m3)
OEL IN BULGARIA, COLOMBIA, JORDAN, KOREA check ACGIH TLV
OEL IN NEW ZEALAND, SINGAPORE, VIETNAM check ACGI TLV
CAS# 75-07-0: OEL-ARAB Republic of Egypt:TWA 100 ppm (180 mg/m3)

OEL-AUSTRALIA:TWA 100 ppm (180 mg/m3);STEL 150 pp (270 mg/m3)
OEL-BELGIUM:TWA 100 ppm (180 mg/m3);STEL 150 ppm (270 mg/m3)
OEL-CZECHOSLOVAKIA:TWA 200 mg/m3;STEL 400 mg/m3;CAR
OEL-DENMARK:TWA 25 ppm (45 mg/m3)
OEL-FINLAND:TWA 50 ppm (90 mg/m3);STEL 75 ppm (13 mg/m3)
OEL-FRANCE:TWA 100 ppm (180 mg/m3)
OEL-GERMANY:TWA 50 ppm (90 mg/m3);Carcinogen JAN9
OEL-HUNGARY:STEL 25 mg/m3;Carcinogen
OEL-INDIA:TWA 100 ppm (180 mg/m3);STEL 150 ppm (270 mg/m3)
OEL-THE NETHERLANDS:TWA 100 ppm (180 mg/m3)
OEL-THE PHILIPPINES:TWA 200 ppm (360 mg/m3)
OEL-POLAND:TWA 5 mg/m3
OEL-RUSSIA:STEL 5 mg/m3;Skin
OEL-SWEDEN:TWA 25 ppm (45 mg/m3);STEL 50 ppm (90 mg/m3)
OEL-SWITZERLAND:TWA 50 ppm (90 mg/m3);STEL 100 pp (180 mg/m3)
OEL-TURKEY:TWA 200 ppm (360 mg/m3)
OEL-UNITED KINGDOM:TWA 100 ppm (180 mg/m3);STEL 150 ppm
OEL IN BULGARIA, COLOMBIA, JORDAN, KOREA check ACGIH TLV
OEL IN NEW ZEALAND, SINGAPORE, VIETNAM check ACGI TLV
CAS# 108-10-1: Not available.
CAS# 108-88-3: OEL-AUSTRALIA:TWA 100 ppm (375 mg/m3);STEL 150 ppm (560 mg/m3)
OEL-BELGIUM:TWA 100 ppm (377 mg/m3);STEL 150 ppm (565 mg/m3)
OEL-CZECHOSLOVAKIA:TWA 200 mg/m3;STEL 1000 mg/m3
OEL-DENMARK:TWA 50 ppm (190 mg/m3);Skin
OEL-FINLAND:TWA 100 ppm (375 mg/m3);STEL 150 ppm;Skin
OEL-FRANCE:TWA 100 ppm (375 mg/m3);STEL 150 ppm (560 mg/m3)
OEL-GERMANY:TWA 100 ppm (380 mg/m3)
OEL-HUNGARY:TWA 100 mg/m3;STEL 300 mg/m3;Skin
OEL-JAPAN:TWA 100 ppm (380 mg/m3)
OEL-THE NETHERLANDS:TWA 100 ppm (375 mg/m3);Skin
OEL-THE PHILIPPINES:TWA 100 ppm (375 mg/m3)
OEL-POLAND:TWA 100 mg/m3
OEL-RUSSIA:TWA 100 ppm;STEL 50 mg/m3
OEL-SWEDEN:TWA 50 ppm (200 mg/m3);STEL 100 ppm (400 mg/m3);Skin
OEL-SWITZERLAND:TWA 100 ppm (380 mg/m3);STEL 500 ppm
OEL-THAILAND:TWA 200 ppm;STEL 300 ppm
OEL-TURKEY:TWA 200 ppm (750 mg/m3)
OEL-UNITED KINGDOM:TWA 100 ppm (375 mg/m3);STEL 150 ppm;Skin
OEL IN BULGARIA, COLOMBIA, JORDAN, KOREA check ACGIH TLV
OEL IN NEW ZEALAND, SINGAPORE, VIETNAM check ACGI TLV
CAS# 141-78-6: OEL-AUSTRALIA:TWA 400 ppm (1400 mg/m3)
OEL-BELGIUM:TWA 400 ppm (1440 mg/m3)
OEL-CZECHOSLOVAKIA:TWA 400 mg/m3;STEL 2000 mg/m3
OEL-DENMARK:TWA 300 ppm (1100 mg/m3)
OEL-FINLAND:TWA 300 ppm (1100 mg/m3);STEL 500 ppm (1800 mg/m3)
OEL-FRANCE:TWA 400 ppm (1400 mg/m3)
OEL-GERMANY:TWA 400 ppm (1400 mg/m3)

OEL-HUNGARY:TWA 400 mg/m3;STEL 1200 mg/m3
OEL-JAPAN:TWA 400 ppm (1400 mg/m3)
OEL-THE NETHERLANDS:TWA 400 ppm (1400 mg/m3) JAN9
OEL-THE PHILIPPINES:TWA 400 ppm (1400 mg/m3) JAN9
OEL-POLAND:TWA 200 ppm
OEL-RUSSIA:TWA 400 ppm;STEL 200 mg/m3
OEL-SWEDEN:TWA 150 ppm (500 mg/m3);STEL 300 ppm (1100 mg/m3)
OEL-SWITZERLAND:TWA 400 ppm (1400 mg/m3);STEL 800 ppm
OEL-TURKEY:TWA 400 ppm (1400 mg/m3)
OEL-UNITED KINGDOM:TWA 400 ppm (1400 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: 10/12/1998 Revision #3 Date: 1/17/2003

Post Apple Scientific, Inc. provides the information contained herein i
good faith but makes no representation as to its comprehensiveness or
accuracy. This document is intended only as a guide to the appropriate
precautionary handling of the material by a properly trained person using
this product. Individuals receiving the information must exercise their
independent judgment in determining its appropriateness for a particular
purpose. POST APPLE SCIENTIFIC, INC. MAKES NO REPRESENTATIONS OR WARRANTIES
EITHER EXPRESS OR IMPLIED, INCLUDING WITHOUT LIMITATION ANY WARRANTIES OF
MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE WITH RESPECT TO THE
INFORMATION SET FORTH HEREIN OR THE PRODUCT TO WHICH THE INFORMATION REFERS
ACCORDINGLY, POST APPLE SCIENTIFIC, INC. WILL NOT BE RESPONSIBLE FOR DAMAGE
RESULTING FROM USE OF OR RELIANCE UPON THIS INFORMATION.

--