SAFETY DATA SHEET

1. Identification

Product identifier **OXPHO BLUE LIQUID, 4 OZ.**

Other means of identification

Product code 082-024-004

Recommended use Not available.

Recommended restrictions Not available.

Manufacturer/Importer/Supplier/Distributor information

Manufacturer

Company name	BROWNELLS, INC.	
Address	200 South Front Street Montezuma, Iowa 50171 United States	
Telephone	(641) 623-5401	
Website	www.brownells.com	
E-mail	Not available.	
Emergency phone number	INFOTRAC	Registrant #79335
	24 hour Emergency Number,	Domestic: (800) 457-4280
	24 hour Emergency Number,	Foreign: +1(352) 323-3500

2. Hazard(s) identification

Physical hazards	Not available.	
Health hazards	Skin corrosion/irritation	Category 1
	Serious eye damage/eye irritation	Category 1
	Sensitization, respiratory	Category 1
	Sensitization, skin	Category 1
	Germ cell mutagenicity	Category 2
	Carcinogenicity	Category 1A
	Reproductive toxicity	Category 1
	Specific target organ toxicity, repeated exposure	Category 1
Environmental hazards	Hazardous to the aquatic environment, acute hazard	Category 3
	Hazardous to the aquatic environment, long-term hazard	Category 3
OSHA defined hazards	Not available.	

Label elements

Signal word Danger

Hazard statement Causes severe skin burns and eye damage. May cause an allergic skin reaction. Causes serious eye damage. Causes damage to organs through prolonged or repeated exposure. May cause allergy or asthma symptoms or breathing difficulties if inhaled. Suspected of causing genetic defects. May cause cancer. May damage fertility or the unborn child. Harmful to aquatic life. Harmful to aquatic life with long lasting effects.

Precautionary statement

Prevention	Do not handle until all safety precautions have been read and understood. 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. Avoid release to the environment. Wear protective gloves/protective clothing/eye protection/face protection. In case of inadequate ventilation wear respiratory protection.
Response	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 exposed or concerned: Get medical advice/attention. Immediately call a poison center/doctor. If skin irritation or rash occurs: Get medical advice/attention. Wash contaminated clothing before reuse.
Storage	Store in accordance with local/regional/national/international regulation. Store locked up.
Disposal	Dispose of contents/container in accordance with local/regional/national/international regulations.

Hazard(s) not otherwise classified (HNOC)

Not available.

Hazard(s) not otherwise classified (HNOC)	Not available.
Supplemental information	5% of the mixture consists of component(s) of unknown acute hazards to the aquatic environment. 5% of the mixture consists of component(s) of unknown long-term hazards to the aquatic environment.

3. Composition/information on ingredients

Mixtures

Chemical name	Common name and synonyms	CAS number	%
PHOSPHORIC ACID		7664-38-2	5 - < 10
COPPER (II) SULFATE PENTAHYDRATE (1:1:5)		7758-99-8	3 - < 5
NICKEL SULFATE		7786-81-4	1 - < 3
SELENOUS ACID		7783-00-8	1 - < 3
Other components below reportable levels			80 - < 90

#: This substance has workplace exposure limit(s).
vPvB: very persistent and very bioaccumulative substance.
PBT: persistent, bioaccumulative and toxic substance.
*Designates that a specific chemical identity and/or percentage of composition has been withheld as a trade secret.

Composition comments	The full text for all R-phrases is displayed in Section 16 of the SDS.

4. First-aid measures

Inhalation	Remove victim to fresh air and keep at rest in a position comfortable for breathing. Oxygen or artificial respiration if needed. Do not use mouth-to-mouth method if victim inhaled the substance. Induce artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. Call a physician or poison control center immediately.
Skin contact	Take off immediately all contaminated clothing. Take off immediately all contaminated clothing. Immediately flush skin with plenty of water. Get medical attention if irritation develops or persists. Chemical burns must be treated by a physician. Call a physician or poison control center immediately. Call a physician or Poison Control Center immediately. In case of eczema or other skin disorders: Seek medical attention and take along these instructions. For minor skin contact, avoid spreading material on unaffected skin. Wash contaminated clothing before reuse. Wash clothing separately before reuse.
Eye contact	Immediately flush eyes with plenty of water for at least 15 minutes. If a contact lens is present, DO NOT delay irrigation or attempt to remove the lens. Continue rinsing. Get medical attention if irritation develops or persists. Call a physician or Poison Control Center immediately.
Ingestion	Call a physician or poison control center immediately. Rinse mouth thoroughly. Do NOT induce vomiting. Never give anything by mouth to a victim who is unconscious or is having convulsions. Do not induce vomiting. If vomiting occurs, keep head low so that stomach content doesn't get into the lungs. Do not use mouth-to-mouth method if victim ingested the substance. Induce artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device.

Most important symptoms/effects, acute and delayed	Burning pain and severe corrosive skin damage. Causes serious eye damage. Severe eye irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Permanent eye damage including blindness could result. Difficulty in breathing. May cause an allergic skin reaction. Dermatitis. Rash. Prolonged exposure may cause chronic effects.
Indication of immediate medical attention and special treatment needed	In case of shortness of breath, give oxygen. Not applicable. Chemical burns: Flush with water immediately. While flushing, remove clothes which do not adhere to affected area. Call an ambulance. Continue flushing during transport to hospital. Keep victim warm. Keep victim under observation. Symptoms may be delayed. Provide general supportive measures and treat symptomatically.
General information	Immediate medical attention is required. In case of shortness of breath, give oxygen. If exposed or concerned: Get medical advice/attention. Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. Show this safety data sheet to the doctor in attendance. Keep victim under observation. Keep victim warm. Wash contaminated clothing before reuse. Show this safety data sheet (SDS) to the doctor in attendance.

5. Fire-fighting measures

Suitable extinguishing media	Water fog. Foam. Dry chemical powder. Carbon dioxide (CO2).
Unsuitable extinguishing media	Do not use water jet as an extinguisher, as this will spread the fire.
Specific hazards arising from the chemical	May react with metals to release hydrogen gas, which can form explosive mixtures with air.
Special protective equipment and precautions for firefighters	Self-contained breathing apparatus and full protective clothing must be worn in case of fire.
Fire fighting equipment/instructions	Move containers from fire area if you can do so without risk.
Specific methods	Use standard firefighting procedures and consider the hazards of other involved materials.
Hazardous combustion products	Not available.
General fire hazards	No unusual fire or explosion hazards noted.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures	Keep people away from and upwind of spill/leak. Keep unnecessary personnel away. Wear appropriate protective equipment and clothing during clean-up. Do not breathe mist or vapor. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Keep upwind. Avoid breathing mist or vapor. Ensure adequate ventilation. Local authorities should be advised if significant spillages cannot be contained. For personal protection, see section 8 of the SDS.
Methods and materials for containment and cleaning up	Should not be released into the environment. Stop the flow of material, if this is without risk. Large Spills: Dike the spilled material, where this is possible. Cover with plastic sheet to prevent spreading. Absorb in vermiculite, dry sand or earth and place into containers. Following product recovery, flush area with water. Small Spills: Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination. Never return spills to original containers for re-use. For waste disposal, see section 13 of the SDS. Prevent entry into waterways, sewer, basements or confined areas. Never return spills in original containers for re-use.
Environmental precautions	Prevent further leakage or spillage if safe to do so. Avoid release to the environment. Avoid discharge into drains, water courses or onto the ground. Inform appropriate managerial or supervisory personnel of all environmental releases. Contact local authorities in case of spillage to drain/aquatic environment. 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. Do not breathe mist or vapor. Do not get this material in contact with eyes. Do not get this material in contact with skin. Do not get in eyes, on skin, or on clothing. Avoid contact with eyes, skin, and clothing. Use personal protective equipment as required. Do not use in areas without adequate ventilation. Avoid prolonged exposure. When using, do not eat, drink or smoke. Pregnant or breastfeeding women must not handle this product. Should be handled in closed systems, if possible. Wash thoroughly after handling. Wear appropriate personal protective equipment. Avoid release to the environment. Do not empty into drains. Handle and open container with care. Observe good industrial hygiene practices.

Conditions for safe storage, including any incompatibilities

Store locked up. Keep container tightly closed. Store in a well-ventilated place. Keep container tightly closed. Keep away from food, drink and animal feedingstuffs. Keep out of the reach of children. Store away from incompatible materials (see Section 10 of the SDS).

8. Exposure controls/personal protection

Occupational exposure limits

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

Components	Type	Value
PHOSPHORIC ACID (CAS 7664-38-2)	PEL	1 mg/m3
SELENOUS ACID (CAS 7783-00-8)	PEL	0.2 mg/m3

US. ACGIH Threshold Limit Values

Components	Type	Value	Form
NICKEL SULFATE (CAS 7786-81-4)	TWA	0.1 mg/m3	Inhalable fraction.
PHOSPHORIC ACID (CAS 7664-38-2)	STEL	3 mg/m3	
	TWA	1 mg/m3	
SELENOUS ACID (CAS 7783-00-8)	TWA	0.2 mg/m3	

US. NIOSH: Pocket Guide to Chemical Hazards

Components	Type	Value	Form
COPPER (II) SULFATE PENTAHYDRATE (1:1:5) (CAS 7758-99-8)	TWA	1 mg/m3	Dust and mist.
NICKEL SULFATE (CAS 7786-81-4)	TWA	0.015 mg/m3	
PHOSPHORIC ACID (CAS 7664-38-2)	STEL	3 mg/m3	
	TWA	1 mg/m3	
SELENOUS ACID (CAS 7783-00-8)	TWA	0.2 mg/m3	

Biological limit values

No biological exposure limits noted for the ingredient(s).

Appropriate engineering controls

Ensure adequate ventilation, especially in confined areas. Eye wash facilities and emergency shower must be available when handling this product. Provide eyewash station.

Individual protection measures, such as personal protective equipment

Eye/face protection

Do not get in eyes. Wear safety glasses with side shields (or goggles) and a face shield. Chemical respirator with organic vapor cartridge and full facepiece.

Skin protection

Hand protection

Wear appropriate chemical resistant gloves.

Other

Do not get this material in contact with skin. Do not get this material on clothing. Wear chemical protective equipment that is specifically recommended by the manufacturer. Structural firefighters protective clothing provides limited protection in fire situations ONLY; it is not effective in spill situations. Use of an impervious apron is recommended. It may provide little or no thermal protection.

Respiratory protection

Do not breathe dust/fume/gas/mist/vapors/spray. Chemical respirator with organic vapor cartridge and full facepiece.

Thermal hazards	Wear appropriate thermal protective clothing, when necessary.
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. Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants. 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	Clear. Blue. Liquid.
Physical state	Liquid.
Form	Liquid.
Color	Clear. Blue.
Odor	Odorless.
Odor threshold	Not available.
pH	1.5
Melting point/freezing point	Not available.
Initial boiling point and boiling range	> 213 °F (> 100.56 °C)
Flash point	Not available.
Evaporation rate	< 1
Flammability (solid, gas)	Not available.
Upper/lower flammability or explosive limits	
Flammability limit - lower (%)	Not available.
Flammability limit - upper (%)	Not available.
Explosive limit - lower (%)	Not available.
Explosive limit - upper (%)	Not available.
Vapor pressure	0.00001 hPa estimated
Vapor density	Not available.
Relative density	Not available.
Solubility(ies)	
Solubility (water)	Not available.
Partition coefficient (n-octanol/water)	Not available.
Auto-ignition temperature	Not available.
Decomposition temperature	Not available.
Viscosity	Not available.
Other information	
Specific gravity	1.01

10. Stability and reactivity

Reactivity	Reacts violently with strong alkaline substances. This product may react with reducing agents.
Chemical stability	Material is stable under normal conditions.
Possibility of hazardous reactions	Hazardous polymerization does not occur.
Conditions to avoid	Do not mix with other chemicals. Contact with incompatible materials. Excessive heat.
Incompatible materials	Bases. Reducing agents. Cyanides, water-reactive substances, strong reducing agents, chlorinated cleaners or sanitizers, combustible organic materials, most metals.

Hazardous decomposition products Reaction with organics and strong reducing agents can produce organoselenides and hydrogen selenide. Thermal decomposition may produce selenium, phosphoric and copper oxides.

11. Toxicological information

Information on likely routes of exposure

Inhalation May cause damage to organs through prolonged or repeated exposure by inhalation. May cause irritation to the respiratory system. May cause allergy or asthma symptoms or breathing difficulties if inhaled. Prolonged inhalation may be harmful.

Skin contact Causes severe skin burns. May cause an allergic skin reaction.

Eye contact Causes serious eye damage.

Ingestion Causes digestive tract burns.

Symptoms related to the physical, chemical and toxicological characteristics Burning pain and severe corrosive skin damage. Causes serious eye damage. Severe eye irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Permanent eye damage including blindness could result. Difficulty in breathing. May cause an allergic skin reaction. Dermatitis. Rash.

Information on toxicological effects

Acute toxicity Causes burns. May cause an allergic skin reaction.

Product	Species	Test Results
OXPHO BLUE LIQUID, 4 OZ.		
Acute		
Dermal		
LD50	Rabbit	54800 mg/kg
Oral		
LD100	Mouse	1666.6666 mg/kg estimated
LD50	Rat	15642 mg/kg

Components	Species	Test Results
COPPER (II) SULFATE PENTAHYDRATE (1:1:5) (CAS 7758-99-8)		
Acute		
Oral		
LD100	Mouse	50 mg/kg
LD50	Rat	960 mg/kg
Other		
LD50	Rabbit	> 8 g/kg
PHOSPHORIC ACID (CAS 7664-38-2)		
Acute		
Dermal		
LD50	Rabbit	2740 mg/kg
Oral		
LD50	Rat	1530 mg/kg

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

Skin corrosion/irritation Hazardous by OSHA criteria. Causes severe skin burns and eye damage. Corrosive effects.

Serious eye damage/eye irritation Causes severe eye burns. Causes serious eye damage.

Respiratory or skin sensitization

Respiratory sensitization May cause allergy or asthma symptoms or breathing difficulties if inhaled.

Skin sensitization May cause an allergic skin reaction.

Germ cell mutagenicity Suspected of causing genetic defects. No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.

Carcinogenicity Hazardous by OSHA criteria. Cancer hazard. Hazardous by WHMIS criteria. May cause cancer.

IARC Monographs. Overall Evaluation of Carcinogenicity

NICKEL SULFATE (CAS 7786-81-4)	1 Carcinogenic to humans.
SELENOUS ACID (CAS 7783-00-8)	3 Not classifiable as to carcinogenicity to humans.

US. National Toxicology Program (NTP) Report on Carcinogens

NICKEL SULFATE (CAS 7786-81-4) Known To Be Human Carcinogen.

Reproductive toxicity May damage fertility or the unborn child. Contains no ingredient listed as toxic to reproduction

Specific target organ toxicity - single exposure Due to partial or complete lack of data the classification is not possible.

Specific target organ toxicity - repeated exposure Causes damage to organs through prolonged or repeated exposure.

Aspiration hazard Due to partial or complete lack of data the classification is not possible.

Chronic effects Hazardous by OSHA criteria. Hazardous by WHMIS criteria. Causes damage to organs through prolonged or repeated exposure. Prolonged inhalation may be harmful. Prolonged exposure may cause chronic effects.

12. Ecological information

Ecotoxicity Harmful to aquatic life with long lasting effects. Components of this product are hazardous to aquatic life. Because of the low pH of this product, it would be expected to produce significant ecotoxicity upon exposure to aquatic organisms and aquatic systems.

Product		Species	Test Results
OXPHO BLUE LIQUID, 4 OZ.			
Aquatic			
Crustacea	EC50	Daphnia	4488 mg/l, 48 hours
Fish	LC50	Fish	16.91 mg/l, 96 hours

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

Persistence and degradability Not established.

Bioaccumulative potential Not established.

Mobility in soil No data available.

Other adverse effects Not established.

13. Disposal considerations

Disposal instructions Contract with a disposal operator licensed by the Law on Disposal and Cleaning. Incinerate the material under controlled conditions in an approved incinerator. Do not allow this material to drain into sewers/water supplies. Do not contaminate ponds, waterways or ditches with chemical or used container. Dispose of contents/container in accordance with local/regional/national/international regulations. When your own wastewater treatment plant is not available, collect entire waste and then charge to a licensed industrial waste management professional with manifests for industrial waste.

Local disposal regulations Dispose in accordance with all applicable regulations.

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). Not applicable.

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. Offer rinsed packaging material to local recycling facilities.

14. Transport information

DOT

UN number UN3264

UN proper shipping name Corrosive Liquid, Acidic, Inorganic, N.O.S. (Selenious and Phosphoric Acids, Nickel Sulfate)

Transport hazard class(es)

Class 8

Subsidiary risk -

Packing group III

Special precautions for user Read safety instructions, SDS and emergency procedures before handling.

IATA

UN number UN3264

UN proper shipping name Corrosive Liquid, Acidic, Inorganic, N.O.S. (Selenious and Phosphoric Acids, Nickel Sulfate)

Transport hazard class(es)

Class	8
Subsidiary risk	-

Packing group	III
Environmental hazards	No.
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.

Other information

Passenger and cargo aircraft	Forbidden.
Cargo aircraft only	Forbidden.

IMDG

UN number	UN3264
UN proper shipping name	Corrosive Liquid, Acidic, Inorganic, N.O.S. (Selenious and Phosphoric Acids, Nickel Sulfate)

Transport hazard class(es)

Class	8
Subsidiary risk	-

Packing group	III

Environmental hazards

Marine pollutant	No.

EmS	Not available.
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.
Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code	Not established.

DOT

IATA; IMDG

General information DOT Regulated Marine Pollutant.

15. Regulatory information

US federal regulations This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.
All components are on the U.S. EPA TSCA Inventory List.
This product is not known to be a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

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

Not regulated.

CERCLA Hazardous Substance List (40 CFR 302.4)

NICKEL SULFATE (CAS 7786-81-4)	Listed.
PHOSPHORIC ACID (CAS 7664-38-2)	Listed.
SELENOUS ACID (CAS 7783-00-8)	Listed.

SARA 304 Emergency release notification

SELENOUS ACID (CAS 7783-00-8)	10 LBS

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories

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

SARA 302 Extremely hazardous substance

Chemical name	CAS number	Reportable quantity	Threshold planning quantity	Threshold planning quantity, lower value	Threshold planning quantity, upper value
SELENOUS ACID	7783-00-8	10		1000 lbs	10000 lbs

SARA 311/312 Hazardous chemical No

SARA 313 (TRI reporting)

Chemical name	CAS number	% by wt.
COPPER (II) SULFATE PENTAHYDRATE (1:1:5)	7758-99-8	3 - < 5
NICKEL SULFATE	7786-81-4	1 - < 3
SELENOUS ACID	7783-00-8	1 - < 3

Other federal regulations

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

NICKEL SULFATE (CAS 7786-81-4)
SELENOUS ACID (CAS 7783-00-8)

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

Not regulated.

Safe Drinking Water Act (SDWA) 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. California Controlled Substances. CA Department of Justice (California Health and Safety Code Section 11100)

Not listed.

US. Massachusetts RTK - Substance List

COPPER (II) SULFATE PENTAHYDRATE (1:1:5) (CAS 7758-99-8)
NICKEL SULFATE (CAS 7786-81-4)
PHOSPHORIC ACID (CAS 7664-38-2)
SELENOUS ACID (CAS 7783-00-8)

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

COPPER (II) SULFATE PENTAHYDRATE (1:1:5) (CAS 7758-99-8)
NICKEL SULFATE (CAS 7786-81-4)
PHOSPHORIC ACID (CAS 7664-38-2)
SELENOUS ACID (CAS 7783-00-8)

US. Pennsylvania Worker and Community Right-to-Know Law

COPPER (II) SULFATE PENTAHYDRATE (1:1:5) (CAS 7758-99-8)
NICKEL SULFATE (CAS 7786-81-4)
PHOSPHORIC ACID (CAS 7664-38-2)
SELENOUS ACID (CAS 7783-00-8)

US. Rhode Island RTK

NICKEL SULFATE (CAS 7786-81-4)
PHOSPHORIC ACID (CAS 7664-38-2)
SELENOUS ACID (CAS 7783-00-8)

US. California Proposition 65

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

US - California Proposition 65 - CRT: Listed date/Carcinogenic substance

NICKEL SULFATE (CAS 7786-81-4) Listed: May 7, 2004

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)	Yes
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 that all components of this product comply with the inventory requirements administered by the governing country(s)
A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

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

Issue date 03-07-2014

Revision date 12-10-2014

Version # 02

References

ACGIH
ACGIH Documentation of the Threshold Limit Values and Biological Exposure Indices
EPA: AQUIRE database
HSDB® - Hazardous Substances Data Bank
IARC Monographs. Overall Evaluation of Carcinogenicity
National Toxicology Program (NTP) Report on Carcinogens
NLM: Hazardous Substances Data Base
US. IARC Monographs on Occupational Exposures to Chemical Agents
Korea. Accidental Release Prevention Substances (Presidential Decree of Toxic Chemical Control Law, Executive Order No. 19203)
Korea. Dangerous Substances Threshold Quantity (Presidential Decree of Dangerous Substances Safety Management Act No. 18406, Schedule 1)
Korea. Harmful Substances Prohibited from Manufacturing (Presidential Decree on the Industrial Safety and Health Act (No. 13053), Article 29)
Korea. Harmful Substances Requiring Permission for Manufacture or Use (Presidential Decree on the Industrial Safety and Health Act (No. 13053), Article 30)
Korea. Non-Toxic Chemicals List (National Institute of Environment Research (NIER) Public Notice No. 1997-10, as amended)
Korea. Observational Chemicals (Ministerial Decree of TCCL Article 6)
Korea. OELs. Regulation for Permitted Concentration of Hazardous Substances (Ministry of Labor (MOL) Public Notice No. 1986-45, as amended)
Korea. Prohibited Chemical Substances (TCCL Article 11)
Korea. Regulated volatile organic compounds (VOCs) (MOE Notice No. 2001-36, March 8, 2001, as amended)
Korea. Restricted Chemical Substances (TCCL Article 11)
Korea. Toxic Chemical Control Law (TCCL), Existing Chemicals Inventory (KECI)
Korea. Toxic Chemical Control Law (TCCL), pre-1997 List
Korea. Toxic Chemicals (TCCL Article 10)
Korea. Toxic Release Inventory (TRI) Chemicals (TCCL Article 14)
Japan Society for Occupational Health, Recommendation of Occupational Exposure Limits
JIS Z 7250: 2005 Safety data sheet for chemical products-Part 1:Content and order of sections
JCIA GHS Guideline, October 2008

Disclaimer

The information provided in 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 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

This document has undergone significant changes and should be reviewed in its entirety.