

**1. Identification**
**Product identifier** Pennguard HP Epoxy Primer Part A

**Other means of identification** Not available.

**Recommended use** Not available.

**Recommended restrictions** None known.

**Manufacturer/Importer/Supplier/Distributor information**
**Manufacturer**

<b>Company Name</b>	ErgonArmor, a division of Ergon Asphalt & Emulsions, Inc.
<b>Address</b>	2829 Lakeland Drive Jackson, MS 39232 USA
<b>After hours telephone number</b>	1-800-222-7122
<b>Normal work hours telephone number</b>	1-877-982-7667
<b>Website</b>	www.ergonarmor.com
<b>E-mail</b>	sds@ergon.com
<b>Emergency 24-hour telephone number</b>	CHEMTREC: North America 1-800-424-9300 International 1-800-527-3887
<b>Information on operation hours</b>	8:00 a.m. to 5:00 p.m.

**2. Hazard(s) identification**

<b>Physical hazards</b>	Flammable liquids	Category 2
<b>Health hazards</b>	Acute toxicity, oral	Category 5
	Serious eye damage/eye irritation	Category 2
	Reproductive toxicity	Category 1B
	Specific target organ toxicity, single exposure	Category 3 narcotic effects
<b>Environmental hazards</b>	Not classified.	
<b>OSHA defined hazards</b>	Not classified.	
<b>Label elements</b>		


**Signal word** Danger

**Hazard statement** Causes skin and eye irritation. May cause drowsiness or dizziness. Highly flammable liquid and vapor. May damage fertility by ingestion.

**Prevention** Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Use only outdoors or in a well-ventilated area. Avoid breathing dust/fume/gas/mist/vapors/spray. Keep away from heat/sparks/open flames/hot surfaces. - No smoking. Keep container tightly closed. Ground/bond container and receiving equipment. Use non-sparking tools and explosion-proof equipment. Use only non-sparking tools. Wash hands thoroughly after handling. Use explosion-proof electrical/ventilating/lighting equipment.

**Response** IF exposed or concerned: Get medical advice/attention. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention. IF SWALLOWED: Rinse mouth. Do NOT induce vomiting. IF INHALED: Remove to fresh air and keep at rest in a position comfortable for breathing. In case of fire: Use CO2 for extinction.

**Storage** Store in a well-ventilated place. Keep cool. Store locked up.

**Disposal** Dispose of contents/container to an appropriate treatment and disposal facility in accordance with applicable laws and regulations, and product characteristics at time of disposal. See section 13 of this SDS for disposal instructions.

**Hazard(s) not otherwise classified (HNOC)** This product may contain the following ingredients; xylene, toluene, n-hexane, cyclohexane, naphthalene, benze and ethyl benzene.

Supplemental information None.

### 3. Composition/information on ingredients

#### Mixtures

Chemical name	Common name and synonyms	CAS number	%
HEPTAN-2-ONE		110-43-0	5 - 25
BENZENE, DIMETHYL		1330-20-7	5 - 15
1-BUTANOL		71-36-3	1 - 5
Other components below reportable levels			73.56

#### 4. First-aid measures

<b>Inhalation</b>	If breathing is difficult, remove to fresh air and keep at rest in a position comfortable for breathing. Call a physician if symptoms develop or persist. Immediately remove from further exposure. Get immediate medical assistance. For those providing assistance, avoid exposure to yourself or others. Use adequate respiratory protection. Give supplemental oxygen, if available. If breathing has stopped, assist ventilation with a mechanical device.
<b>Skin contact</b>	Immediately remove contaminated clothing and shoes and wash skin with soap and plenty of water. If clothing sticks to the skin, do not remove. Wash contact areas with soap and water. If needed, seek medical attention.
<b>Eye contact</b>	Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention if irritation develops and persists.
<b>Ingestion</b>	Rinse mouth. DO NOT induce vomiting. Get medical attention immediately. If ingestion of a large amount does occur, call a poison control center immediately.
<b>Most important symptoms/effects, acute and delayed</b>	Irritation of eyes and mucous membranes.
<b>Indication of immediate medical attention and special treatment needed</b>	Treat symptomatically. Symptoms may be delayed.

#### 5. Fire-fighting measures

<b>Suitable extinguishing media</b>	Water spray, fog, CO <sub>2</sub> , dry chemical, or alcohol resistant foam.
<b>Unsuitable extinguishing media</b>	Do not use a solid water stream as it may scatter and spread fire.
<b>Specific hazards arising from the chemical</b>	Do not use forced stream as this could cause fire to spread.
<b>Special protective equipment and precautions for firefighters</b>	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.
<b>Fire-fighting equipment/instructions</b>	ALWAYS stay away from tanks engulfed in flame. Fight fire from maximum distance or use unmanned hose holders or monitor nozzles. Move containers from fire area if you can do so without risk. In the event of fire, cool tanks with water spray. Do not release runoff from fire control methods to sewers or waterways.
<b>Specific methods</b>	In the event of fire and/or explosion do not breathe fumes. In the event of fire, cool tanks with water spray.
<b>General fire hazards</b>	Flammable liquid and vapor.

#### 6. Accidental release measures

<b>Personal precautions, protective equipment and emergency procedures</b>	Eliminate all sources of ignition. Keep unnecessary personnel away. Ventilate closed spaces before entering them. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing.
<b>Methods and materials for containment and cleaning up</b>	Remove sources of ignition. For large spills, dike far ahead of liquid spill for later disposal. Do not release into sewers or waterways. Dike far ahead of spill for later disposal. Absorb or cover with dry earth, sand or other non-combustible material and transfer to containers. Ventilate area and avoid breathing vapors or mist.
<b>Environmental precautions</b>	Do not allow the spilled product to enter public drainage systems or open watercourses.

#### 7. Handling and storage

<b>Precautions for safe handling</b>	Avoid heat, sparks, open flames and other ignition sources. Avoid breathing mist or vapor. Avoid contact with eyes and prolonged or repeated contact with skin.
<b>Conditions for safe storage, including any incompatibilities</b>	Prevent electrostatic charge build-up by using common bonding and grounding techniques. Store in a well-ventilated place. Avoid heat, sparks, open flames and other ignition sources.

## 8. Exposure controls/personal protection

### Occupational exposure limits

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

Components	Type	Value
1-BUTANOL (CAS 71-36-3)	PEL	300 mg/m <sup>3</sup> 100 ppm
BENZENE, DIMETHYL (CAS 1330-20-7)	PEL	435 mg/m <sup>3</sup> 100 ppm
HEPTAN-2-ONE (CAS 110-43-0)	PEL	465 mg/m <sup>3</sup> 100 ppm

#### US. ACGIH Threshold Limit Values

Components	Type	Value
1-BUTANOL (CAS 71-36-3)	TWA	20 ppm
BENZENE, DIMETHYL (CAS 1330-20-7)	STEL	150 ppm
HEPTAN-2-ONE (CAS 110-43-0)	TWA	100 ppm
	TWA	50 ppm

#### US. NIOSH: Pocket Guide to Chemical Hazards

Components	Type	Value
1-BUTANOL (CAS 71-36-3)	Ceiling	150 mg/m <sup>3</sup> 50 ppm
HEPTAN-2-ONE (CAS 110-43-0)	TWA	465 mg/m <sup>3</sup> 100 ppm

### Biological limit values

#### ACGIH Biological Exposure Indices

Components	Value	Determinant	Specimen	Sampling Time
BENZENE, DIMETHYL (CAS 1330-20-7)	1.5 g/g	Methylhippuric acids	Creatinine in urine	*

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

### Exposure guidelines

#### US - California OELs: Skin designation

1-BUTANOL (CAS 71-36-3) Can be absorbed through the skin.

#### US - Minnesota Haz Subs: Skin designation applies

1-BUTANOL (CAS 71-36-3) Skin designation applies.

#### US - Tennessee OELs: Skin designation

1-BUTANOL (CAS 71-36-3) Can be absorbed through the skin.

#### US NIOSH Pocket Guide to Chemical Hazards: Skin designation

1-BUTANOL (CAS 71-36-3) Can be absorbed through the skin.

### Appropriate engineering controls

Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. Explosion-proof general and local exhaust ventilation.

### Individual protection measures, such as personal protective equipment

**Eye/face protection** Chemical goggles and face shield are recommended.

**Hand protection** Use protective gloves.

**Other** Plastic or rubber gloves, apron and boots.

**Respiratory protection** When workers are facing concentrations above the exposure limit they must use appropriate certified respirators.

**Thermal hazards** Not available.

### General hygiene considerations

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.

## 9. Physical and chemical properties

<b>Appearance</b>	Not available.
<b>Physical state</b>	Liquid.
<b>Form</b>	Liquid.
<b>Color</b>	Varies
<b>Odor</b>	Acetone-like.
<b>Odor threshold</b>	Not available.
<b>pH</b>	Not available.
<b>Melting point/freezing point</b>	Not available.
<b>Initial boiling point and boiling range</b>	Not available.
<b>Flash point</b>	80.0 °F (26.7 °C) Tag Closed Cup
<b>Evaporation rate</b>	1.8 BuAc
<b>Flammability (solid, gas)</b>	Not available.
<b>Upper/lower flammability or explosive limits</b>	
<b>Flammability limit - lower (%)</b>	1.1 % estimated 1.4 %
<b>Flammability limit - upper (%)</b>	Not available.
<b>Explosive limit - lower (%)</b>	Not available.
<b>Explosive limit - upper (%)</b>	Not available.
<b>Vapor pressure</b>	Not available.
<b>Vapor density</b>	> 1
<b>Relative density</b>	Not available.
<b>Solubility(ies)</b>	
<b>Solubility (water)</b>	Not available.
<b>Partition coefficient (n-octanol/water)</b>	Not available.
<b>Auto-ignition temperature</b>	> 930.2 °F (> 499 °C)
<b>Decomposition temperature</b>	Not available.
<b>Viscosity</b>	Not available.
<b>Other information</b>	
<b>Specific gravity</b>	11.54
<b>VOC (Weight %)</b>	3.31 lb/gal

## 10. Stability and reactivity

<b>Reactivity</b>	Not available.
<b>Chemical stability</b>	Stable.
<b>Possibility of hazardous reactions</b>	Will not occur.
<b>Conditions to avoid</b>	Heat, sparks, flames.
<b>Incompatible materials</b>	Strong oxidizing agents.
<b>Hazardous decomposition products</b>	Upon decomposition, this product emits oxides of sulfur, carbon monoxide, carbon dioxide and/or low molecular weight hydrocarbons.

## 11. Toxicological information

### Information on likely routes of exposure

<b>Ingestion</b>	May cause gastrointestinal discomfort if swallowed. Do not induce vomiting. Vomiting may increase risk of product aspiration.
<b>Inhalation</b>	Vapors have a narcotic effect and may cause headache, fatigue, dizziness and nausea.
<b>Skin contact</b>	Frequent or prolonged contact may defat and dry the skin, leading to discomfort and dermatitis.
<b>Eye contact</b>	Causes serious eye irritation.

**Symptoms related to the physical, chemical and toxicological characteristics** Not available.

**Information on toxicological effects**

**Acute toxicity** Harmful by inhalation.

<b>Product</b>	<b>Species</b>	<b>Test Results</b>
Pennguard HP Epoxy Primer Part A (CAS Mixture)		
<b>Acute</b>		
<i>Dermal</i>		
LD50	Rabbit	23315.0469 mg/kg estimated
<i>Inhalation</i>		
LC50	Mouse	59196.9688 mg/l, 6 Hours estimated
	Rat	96212.125 mg/l, 4 Hours estimated
		63291.1406 ppm, 4 Hours estimated
<i>Oral</i>		
LD50	Mouse	7135.7432 mg/kg estimated
	Rat	5594.9053 mg/kg estimated
<i>Other</i>		
LD50	Mouse	2982.595 mg/kg estimated
	Rat	55.9717 mg/kg estimated

<b>Components</b>	<b>Species</b>	<b>Test Results</b>
1-BUTANOL (CAS 71-36-3)		
<b>Acute</b>		
<i>Dermal</i>		
LD50	Rabbit	3400 mg/kg
<i>Inhalation</i>		
LC50	Rat	8000 ppm, 4 Hours
<i>Oral</i>		
LD50	Rat	790 mg/kg
<i>Other</i>		
LD50	Mouse	377 mg/kg
	Rat	310 mg/kg

BENZENE, DIMETHYL (CAS 1330-20-7)		
<b>Acute</b>		
<i>Dermal</i>		
LD50	Rabbit	> 43 g/kg
<i>Inhalation</i>		
LC50	Mouse	3907 mg/l, 6 Hours
	Rat	6350 mg/l, 4 Hours
<i>Oral</i>		
LD50	Mouse	1590 mg/kg
	Rat	3523 - 8600 mg/kg
<i>Other</i>		
LD50	Rat	3.8 mg/kg

HEPTAN-2-ONE (CAS 110-43-0)		
<b>Acute</b>		
<i>Dermal</i>		
LD50	Rabbit	12600 mg/kg
<i>Oral</i>		
LD50	Mouse	730 mg/kg
	Rat	1.67 g/kg

Components	Species	Test Results
<i>Other</i> LD50	Rat	800 mg/kg

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

**Skin corrosion/irritation** Not available. Irritating and may cause redness and pain.

**Serious eye damage/eye irritation** Causes eye irritation.

**Respiratory or skin sensitization**

**Respiratory sensitization** Not classified. Not available.

**Skin sensitization** Frequent or prolonged contact may defat and dry the skin, leading to discomfort and dermatitis. Not classified. None known. Not available.

**Germ cell mutagenicity** No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic. Not available. Not classified.

**Carcinogenicity** This product is not considered to be a carcinogen by IARC, ACGIH, NTP, or OSHA. Not available. Not classifiable as to carcinogenicity to humans. Not classified.

**IARC Monographs. Overall Evaluation of Carcinogenicity**

BENZENE, DIMETHYL (CAS 1330-20-7) 3 Not classifiable as to carcinogenicity to humans.

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

Not listed.

**Reproductive toxicity** Components in this product have been shown to cause birth defects and reproductive disorders in laboratory animals.

**Specific target organ toxicity - single exposure** Narcotic effects.

**Specific target organ toxicity - repeated exposure** Not classified. Not available.

**Aspiration hazard** Not classified. Not available.

**Chronic effects** Hazardous by OSHA criteria. Prolonged inhalation may be harmful. Repeated absorption may cause disorder of central nervous system, liver, kidneys and blood. Prolonged exposure may cause chronic effects. Not expected to be hazardous by WHMIS criteria.

**Further information** Symptoms may be delayed.

**12. Ecological information**

**Ecotoxicity** Components of this product are hazardous to aquatic life. Accumulation in aquatic organisms is expected. Not expected to be harmful to aquatic organisms. Harmful to aquatic life with long lasting effects.

Product	Species	Test Results
Penguinard HP Epoxy Primer Part A (CAS Mixture)		
Crustacea	EC50	Daphnia
		15007.9111 mg/l, 48 hours estimated
Fish	LC50	Fish
		481.4012 mg/l, 96 hours estimated
Components	Species	Test Results
1-BUTANOL (CAS 71-36-3)		
<b>Aquatic</b>		
Crustacea	EC50	Water flea (Daphnia magna)
		1897 - 2072 mg/l, 48 hours
Fish	LC50	Bluegill (Lepomis macrochirus)
		100 - 500 mg/l, 96 hours
BENZENE, DIMETHYL (CAS 1330-20-7)		
<b>Aquatic</b>		
Fish	LC50	Bluegill (Lepomis macrochirus)
		7.711 - 9.591 mg/l, 96 hours
HEPTAN-2-ONE (CAS 110-43-0)		
<b>Aquatic</b>		
Fish	LC50	Fathead minnow (Pimephales promelas)
		126 - 137 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.

**Bioaccumulative potential** Not available.

**Partition coefficient n-octanol / water (log Kow)**

1-BUTANOL 0.88

**Partition coefficient n-octanol / water (log Kow)**

BENZENE, DIMETHYL	3.12 - 3.2
HEPTAN-2-ONE	1.98

**Mobility in soil** Not available.

**Other adverse effects** Not available.

**13. Disposal considerations**

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

**Hazardous waste code** D001: Waste Flammable material with a flash point <140 F

**US RCRA Hazardous Waste U List: Reference**

1-BUTANOL (CAS 71-36-3)	U031
BENZENE, DIMETHYL (CAS 1330-20-7)	U239

**Waste from residues / unused products** Dispose of in accordance with local regulations.

**Contaminated packaging** Residual vapors may explode on ignition; do not cut, drill, grind, or weld on or near this container. Recycle empty drums at an appropriate facility in accordance with current applicable laws and regulations, and product characteristics at time of disposal. Ensure drums are tightly sealed.

**14. Transport information****DOT**

<b>UN number</b>	UN1263
<b>UN proper shipping name</b>	Paint related material including paint thinning, drying, removing, or reducing compound
<b>Transport hazard class(es)</b>	
<b>Class</b>	3
<b>Subsidiary risk</b>	-
<b>Label(s)</b>	3
<b>Packing group</b>	III
<b>Special precautions for user</b>	Read safety instructions, SDS and emergency procedures before handling.
<b>Special provisions</b>	B1, B52, IB3, T2, TP1, TP29
<b>Packaging exceptions</b>	150
<b>Packaging non bulk</b>	173
<b>Packaging bulk</b>	242

**IATA**

<b>UN number</b>	UN1263
<b>UN proper shipping name</b>	Paint related material (including paint thinning or reducing compounds)
<b>Transport hazard class(es)</b>	
<b>Class</b>	3
<b>Subsidiary risk</b>	-
<b>Packing group</b>	III
<b>Environmental hazards</b>	No.
<b>ERG Code</b>	3L
<b>Special precautions for user</b>	Not available.
<b>Other information</b>	
<b>Passenger and cargo aircraft</b>	Allowed.
<b>Cargo aircraft only</b>	Allowed.

**IMDG**

<b>UN number</b>	UN1263
<b>UN proper shipping name</b>	PAINT (including paint, lacquer, enamel, stain, shellac solutions, varnish, polish, liquid filler and liquid lacquer base) or PAINT RELATED MATERIAL (including paint thinning or reducing compound)
<b>Transport hazard class(es)</b>	
<b>Class</b>	3
<b>Subsidiary risk</b>	-
<b>Packing group</b>	III
<b>Environmental hazards</b>	
<b>Marine pollutant</b>	No.
<b>EmS</b>	F-E, S-E*
<b>Special precautions for user</b>	Not available.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not available.

DOT



IATA; IMDG



## 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.

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

Not regulated.

### CERCLA Hazardous Substance List (40 CFR 302.4)

1-BUTANOL (CAS 71-36-3) Listed.

BENZENE, DIMETHYL (CAS 1330-20-7) Listed.

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

Not 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

Not listed.

#### SARA 311/312

No

#### Hazardous chemical

#### SARA 313 (TRI reporting)

Chemical name	CAS number	% by wt.
BENZENE, DIMETHYL	1330-20-7	5 - 15
1-BUTANOL	71-36-3	1 - 5

### Other federal regulations

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

BENZENE, DIMETHYL (CAS 1330-20-7)

#### 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

California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65): This material is not known to contain any chemicals currently listed as carcinogens or reproductive toxins.



**US. Massachusetts RTK - Substance List**

1-BUTANOL (CAS 71-36-3)  
 BENZENE, DIMETHYL (CAS 1330-20-7)  
 HEPTAN-2-ONE (CAS 110-43-0)

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

1-BUTANOL (CAS 71-36-3) 500 LBS  
 BENZENE, DIMETHYL (CAS 1330-20-7) 500 LBS

**US. Pennsylvania RTK - Hazardous Substances**

1-BUTANOL (CAS 71-36-3)  
 BENZENE, DIMETHYL (CAS 1330-20-7)  
 HEPTAN-2-ONE (CAS 110-43-0)

**US. Rhode Island RTK**

1-BUTANOL (CAS 71-36-3)  
 BENZENE, DIMETHYL (CAS 1330-20-7)

**US. California Proposition 65**

Not Listed.

**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**

<b>Issue date</b>	05-07-2015
<b>Revision date</b>	08-10-2016
<b>Version #</b>	03
<b>Further information</b>	HMIS® is a registered trade and service mark of the NPCA.
<b>NFPA ratings</b>	Health: 2 Flammability: 3 Instability: 0

## References

ACGIH  
EPA: AQUIRE database  
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)  
Taiwan. Dangerous Materials (Rules on Hazard Communication of Dangerous Materials and Toxic Materials)  
Taiwan. Industrial Precursor Chemicals (Categories and Regulations Governing Inspection and Declaration of Industrial Precursor Chemicals, MOEA Decree No. 87, as amended)  
Taiwan. OELs. (Standards on Workplace Atmosphere of Dangerous and Hazardous Materials)  
Taiwan. Toxic Chemical Substances (TCS) (List of Toxic Chemical Substances announced by the Environmental Protection Administration)  
Taiwan. Toxic Materials (Rules on Hazard Communication of Dangerous Materials and Toxic Materials)  
HSDB® - Hazardous Substances Data Bank  
JIS Z 7250: 2005 Safety data sheet for chemical products-Part 1:Content and order of sections  
JCIA GHS Guideline, October 2008  
IARC Monographs. Overall Evaluation of Carcinogenicity  
National Toxicology Program (NTP) Report on Carcinogens  
ACGIH Documentation of the Threshold Limit Values and Biological Exposure Indices  
Japan Society for Occupational Health, Recommendation of Occupational Exposure Limits  
GOST 30333-2007 - Chemical production safety passport. General requirements

## 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 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

Physical & Chemical Properties: Multiple Properties  
Transport Information: Proper Shipping Name/Packing Group