



GARDENA, CA
NEW BRUNSWICK, NJ

Material Safety Data Sheet

NFPA	HMIS	Personal Protective Equipment						
	<table><tr><td>Health Hazard</td><td>2</td></tr><tr><td>Fire Hazard</td><td>1</td></tr><tr><td>Reactivity</td><td>0</td></tr></table>	Health Hazard	2	Fire Hazard	1	Reactivity	0	<div></div> <div>See Section 15.</div>
Health Hazard	2							
Fire Hazard	1							
Reactivity	0							

Section 1. Chemical Product and Company Identification		Page Number: 1
Common Name/ Trade Name	Hexamethylphosphoramide	Catalog Number(s). H2700
Manufacturer	SPECTRUM LABORATORY PRODUCTS INC. 14422 S. SAN PEDRO STREET GARDENA, CA 90248	CAS# 680-31-9
Commercial Name(s)	Hempa; Hexametapol; HMPA; HMPT; HPT	RTECS TD0875000
Synonym	Hexamethylphosphoric acid triamide; Hexamethylphosphoric triamide; Hexamethylphosphorotriamide; Hexamethylphosphotriamide; N,N,N,N,N,N-Hexamethylphosphoric triamide; Phosphoric acid hexamethyltriamide; Phosphoric tris(dimethylamide); Phosphoryl hexamethyltriamide; Tri(dimethylamino)phosphine oxide; Tris(dimethylamino)phosphine oxide; Tris(dimethylamino) phosphorus oxide	TSCA TSCA 8(b) inventory: Hexamethylphosphoramide
Chemical Name	Phosphoric triamide, hexamethyl-	CI# Not available.
Chemical Family	Not available.	IN CASE OF EMERGENCY CHEMTREC (24hr) 800-424-9300 CALL (310) 516-8000
Chemical Formula	C ₆ H ₁₈ N ₃ O-P	
Supplier	SPECTRUM LABORATORY PRODUCTS INC. 14422 S. SAN PEDRO STREET GARDENA, CA 90248	

Section 2. Composition and Information on Ingredients					
		Exposure Limits			
Name	CAS #	TWA (mg/m ³)	STEL (mg/m ³)	CEIL (mg/m ³)	% by Weight
1) Hexamethylphosphoramide	680-31-9				100
Toxicological Data on Ingredients Hexamethylphosphoramide: ORAL (LD50): Acute: 2650 mg/kg [Rat]. 2400 mg/kg [Mouse]. 1600 mg/kg [Guinea pig]. DERMAL (LD50): Acute: 2600 mg/kg [Rabbit].					

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Section 3. Hazards Identification

Potential Acute Health Effects	Hazardous in case of skin contact (irritant), of eye contact (irritant). Slightly hazardous in case of skin contact (permeator), of ingestion, of inhalation.
Potential Chronic Health Effects	CARCINOGENIC EFFECTS: Classified 2B (Possible for human.) by IARC. Classified A2 (Suspected for human.) by ACGIH. MUTAGENIC EFFECTS: Mutagenic for mammalian somatic cells. Mutagenic for bacteria and/or yeast. TERATOGENIC EFFECTS: Not available. DEVELOPMENTAL TOXICITY: Not available. The substance may be toxic to kidneys, upper respiratory tract. Repeated or prolonged exposure to the substance can produce target organs damage.

Section 4. First Aid Measures

Eye Contact	Check for and remove any contact lenses. In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Get medical attention.
Skin Contact	In case of contact, immediately flush skin with plenty of water. Cover the irritated skin with an emollient. Remove contaminated clothing and shoes. Wash clothing before reuse. Thoroughly clean shoes before reuse. Get medical attention.
Serious Skin Contact	Wash with a disinfectant soap and cover the contaminated skin with an anti-bacterial cream. Seek medical attention.
Inhalation	If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.
Serious Inhalation	Not available.
Ingestion	Do NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Loosen tight clothing such as a collar, tie, belt or waistband. Get medical attention if symptoms appear.
Serious Ingestion	Not available.

Section 5. Fire and Explosion Data

Flammability of the Product	May be combustible at high temperature.
Auto-Ignition Temperature	Not available.
Flash Points	CLOSED CUP: 144°C (291.2°F).
Flammable Limits	Not available.
Products of Combustion	These products are carbon oxides (CO, CO ₂), nitrogen oxides (NO, NO ₂ ...).
Fire Hazards in Presence of Various Substances	Slightly flammable to flammable in presence of open flames and sparks, of heat.
Explosion Hazards in Presence of Various Substances	Risks of explosion of the product in presence of mechanical impact: Not available. Risks of explosion of the product in presence of static discharge: Not available.
Fire Fighting Media and Instructions	SMALL FIRE: Use DRY chemical powder. LARGE FIRE: Use water spray, fog or foam. Do not use water jet.
Special Remarks on Fire Hazards	When heated to decomposition it emits very toxic fumes of phosphine, phosphorus oxides, and nitrogen oxides
Special Remarks on Explosion Hazards	Not available.

Section 6. Accidental Release Measures

Small Spill	Absorb with an inert material and put the spilled material in an appropriate waste disposal.
Large Spill	Absorb with an inert material and put the spilled material in an appropriate waste disposal. Finish cleaning by spreading water on the contaminated surface and allow to evacuate through the sanitary system.

Section 7. Handling and Storage

Precautions	Keep away from heat. Keep away from sources of ignition. Ground all equipment containing material. Do not ingest. Do not breathe gas/fumes/ vapor/spray. Wear suitable protective clothing. If ingested, seek medical advice immediately and show the container or the label. Avoid contact with skin and eyes. Keep away from incompatibles such as oxidizing agents, metals, acids.
Storage	Keep container tightly closed. Keep container in a cool, well-ventilated area.

Section 8. Exposure Controls/Personal Protection

Engineering Controls	Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapors below their respective threshold limit value. Ensure that eyewash stations and safety showers are proximal to the work-station location.
Personal Protection	Splash goggles. Lab coat. Gloves.
Personal Protection in Case of a Large Spill	Splash goggles. Full suit. Boots. Gloves. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product.
Exposure Limits	Not available.

Section 9. Physical and Chemical Properties

Physical state and appearance	Liquid.	Odor	Aromatic. Spicy.
Molecular Weight	179.2 g/mole	Taste	Not available.
pH (1% soln/water)	Not available.	Color	Colorless. Clear Colorless to light yellow.
Boiling Point	233°C (451.4°F)		
Melting Point	5°C (41°F)		
Critical Temperature	Not available.		
Specific Gravity	1.03 (Water = 1)		
Vapor Pressure	0 kPa (@ 20°C)		
Vapor Density	6.18 (Air = 1)		
Volatility	Not available.		
Odor Threshold	Not available.		
Water/Oil Dist. Coeff.	Not available.		
Ionicity (in Water)	Not available.		
Dispersion Properties	Not available.		
Solubility	Not available.		

Section 10. Stability and Reactivity Data

Stability	The product is stable.
Instability Temperature	Not available.
Conditions of Instability	Excess heat, incompatible materials.
Incompatibility with various substances	Reactive with oxidizing agents, metals, acids.
Corrosivity	Not available.
Special Remarks on Reactivity	Does not hydrolyze in alkaline, but hydrolyzes slowly in acids. Incompatible with chemically active metals (e.g. potassium, sodium, magnesium, zinc)
Special Remarks on Corrosivity	Not available.
Polymerization	Will not occur.

Section 11. Toxicological Information

Routes of Entry	Absorbed through skin. Eye contact.
Toxicity to Animals	Acute oral toxicity (LD50): 1600 mg/kg [Guinea pig]. Acute dermal toxicity (LD50): 2600 mg/kg [Rabbit].
Chronic Effects on Humans	CARCINOGENIC EFFECTS: Classified 2B (Possible for human.) by IARC. Classified A2 (Suspected for human.) by ACGIH. MUTAGENIC EFFECTS: Mutagenic for mammalian somatic cells. Mutagenic for bacteria and/or yeast. May cause damage to the following organs: kidneys, upper respiratory tract.
Other Toxic Effects on Humans	Hazardous in case of skin contact (irritant). Slightly hazardous in case of skin contact (permeator), of ingestion, of inhalation.
Special Remarks on Toxicity to Animals	Not available.
Special Remarks on Chronic Effects on Humans	May affect genetic material (mutagenic). May cause adverse reproductive effects based on animal test data. May cause cancer based on animal test data.
Special Remarks on other Toxic Effects on Humans	Acute Potential Health Effects: Skin: Causes skin irritation. It can be absorbed through the skin. It may affect behavior/central nervous system/peripheral nervous system (somnolence, ataxia, convulsions, fasciculations), kidneys (hematuria), respiration (dyspnea) if absorbed through the skin. Eyes: Causes eye irritation. Inhalation: Can cause respiratory tract (nose, throat) irritation. May affect blood. Ingestion: It may cause hypermotility, diarrhea. It may affect behavior/central nervous system (ataxia, somnolence, convulsions), urinary system (hematuria, incontinence) Chronic Potential Health Effects: Inhalation: Prolonged or repeated inhalation can irritate the lungs. It may cause bronchitis to develop with cough, phlegm, and/or shortness of breath. May cause lung damage. Ingestion: Prolonged or repeated ingestion may cause hypermotility, diarrhea. May affect respiration (bronchiectasis, fibrosis, focal (pneumoconiosis)), metabolism (weight loss), endocrine system (thymus). May cause kidney damage.


Section 12. Ecological Information

Ecotoxicity	Not available.
BOD5 and COD	Not available.
Products of Biodegradation	Possibly hazardous short term degradation products are not likely. However, long term degradation products may arise.
Toxicity of the Products of Biodegradation	The product itself and its products of degradation are not toxic.
Special Remarks on the Products of Biodegradation	Not available.

Section 13. Disposal Considerations

Waste Disposal	Waste must be disposed of in accordance with federal, state and local environmental control regulations.
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Section 14. Transport Information

DOT Classification	Not a DOT controlled material (United States).
Identification	Not applicable.
Special Provisions for Transport	Not applicable.
DOT (Pictograms)	

Section 15. Other Regulatory Information and Pictograms

Federal and State Regulations	<p>California prop. 65: This product contains the following ingredients for which the State of California has found to cause cancer, birth defects or other reproductive harm, which would require a warning under the statute: Hexamethylphosphoramide</p> <p>California prop. 65: This product contains the following ingredients for which the State of California has found to cause reproductive harm (male) which would require a warning under the statute: Hexamethylphosphoramide</p> <p>California prop. 65: This product contains the following ingredients for which the State of California has found to cause cancer which would require a warning under the statute: Hexamethylphosphoramide</p> <p>Illinois toxic substances disclosure to employee act: Hexamethylphosphoramide</p> <p>Illinois chemical safety act: Hexamethylphosphoramide</p> <p>New York release reporting list: Hexamethylphosphoramide</p> <p>Rhode Island RTK hazardous substances: Hexamethylphosphoramide</p> <p>Pennsylvania RTK: Hexamethylphosphoramide</p> <p>Minnesota: Hexamethylphosphoramide</p> <p>Massachusetts RTK: Hexamethylphosphoramide</p> <p>New Jersey: Hexamethylphosphoramide</p> <p>New Jersey spill list: Hexamethylphosphoramide</p> <p>Louisiana spill reporting: Hexamethylphosphoramide</p> <p>California Director's List of Hazardous Substances: Hexamethylphosphoramide</p> <p>TSCA 8(b) inventory: Hexamethylphosphoramide</p> <p>TSCA 5(a)2 final significant rules: Hexamethylphosphoramide</p> <p>TSCA 12(b) annual export notification: Hexamethylphosphoramide</p> <p>SARA 313 toxic chemical notification and release reporting: Hexamethylphosphoramide</p> <p>CERCLA: Hazardous substances.: Hexamethylphosphoramide: 1 lbs. (0.4536 kg)</p>
California Proposition 65 Warnings	California prop. 65: This product contains the following ingredients for which the State of California has found to cause cancer which would require a warning under the statute: Hexamethylphosphoramide

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California prop. 65: This product contains the following ingredients for which the State of California has found to cause birth defects which would require a warning under the statute: No products were found.

Other Regulations

OSHA: Hazardous by definition of Hazard Communication Standard (29 CFR 1910.1200).
 EINECS: This product is on the European Inventory of Existing Commercial Chemical Substances (EINECS No. 211-653-8).
 Canada: Listed on Canadian Non-Domestic Substance List (NDSL).
 China: Listed on National Inventory.
 Japan: Listed on National Inventory (ENCS).
 Korea: Listed on National Inventory (KECI).
 Philippines: Not listed on National Inventory (PICCS).
 Australia: Listed on AICS.

Other Classifications

WHMIS (Canada) CLASS D-2A: Material causing other toxic effects (VERY TOXIC).

DSCL (EEC)

R45- May cause cancer.
 R46- May cause heritable genetic damage.

S45- In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).
 S53- Avoid exposure - obtain special instructions before use.

HMIS (U.S.A.)

Health Hazard	2
Fire Hazard	1
Reactivity	0
Personal Protection	j

National Fire Protection Association (U.S.A.)

Health	2	1	0	Flammability
				Reactivity
				Specific hazard

WHMIS (Canada) (Pictograms)**DSCL (Europe) (Pictograms)****TDG (Canada) (Pictograms)****ADR (Europe) (Pictograms)****Protective Equipment**

Gloves.



Lab coat.



Wear appropriate respirator when ventilation is inadequate.

Splash goggles.

Section 16. Other Information**MSDS Code** H0267**References** Not available.**Other Special Considerations** Not available.

Validated by Sonia Owen on 1/2/2007.

Verified by Sonia Owen.

Printed 1/2/2007.

CALL (310) 516-8000

Notice to Reader

All chemicals may pose unknown hazards and should be used with caution. This Material Safety Data Sheet (MSDS) applies only to the material as packaged. If this product is combined with other materials, deteriorates, or becomes contaminated, it may pose hazards not mentioned in this MSDS. It shall be the user's responsibility to develop proper methods of handling and personal protection based on the actual conditions of use. While this MSDS is based on technical data judged to be reliable, Spectrum Quality Products, Inc. assumes no responsibility for the completeness or accuracy of the information contained herein.