


Material Safety Data Sheet

RISK PHRASES	PROTECTIVE CLOTHING
Harmful liquid, minimize exposure. Irritating to skin, eyes, and the respiratory system.	

Section I. Chemical Product and Company Identification	
Product Name PENTAKEEP-Super	
Component Mixture of Magnesium Nitrate, Urea, Phosphoric Acid, Potassium Hydroxide, Ammonium Nitrate, Water and other non-Hazardous compounds. (Fertilizer)	Manufacturer COSMO SEIWA AGRICULTURE Co., Ltd. TOSHIBA BLDG., 1-1, SHIBAURA 1-CHOME, MINATO-KU, TOKYO 105-8528, JAPAN Phone: +81-3-3798-1225 FAX: +81-3-3798-3216

Section II. Composition and Information on Ingredients				
Chemical Name	CAS Number	Percent (%)	TLV/PEL	Toxicology Data
Magnesium Nitrate, hexahydrate	13446-18-9	< 20	Not available.	Rat LD ₅₀ (oral) 5440 mg/kg
Urea	57-13-6	< 15	Not available.	Rat LD ₅₀ (oral) 8471 mg/kg Rat LD ₅₀ (intraperitoneal) >5 g/kg Rat LD ₅₀ (intravenous) 5300 mg/kg
Phosphoric Acid	7664-38-2	< 10	OSHA PEL:8H TWA 1 mg/m ³ ACGIH TLV:TWA 1 mg/m ³ , STEL 3 mg/m ³ Consult local authorities for acceptable exposure limits.	Rat LD ₅₀ (oral) 1530 mg/kg Rabbit LD ₅₀ (dermal) 2740 mg/kg
Potassium Hydroxide	1310-58-3	< 5	ACGIH TLV: CL 2mg/m ³ Consult local authorities for acceptable exposure limits.	Rat LD ₅₀ (oral) 273 mg/kg
Ammonium Nitrate	6484-52-2	< 5	Not available.	Rat LD ₅₀ (oral) 2217 mg/kg
Other Compounds (non-Hazardous)	---	10 - 20	Not available.	Not available.
Water	7732-18-5	20 - 30	Not available.	Not available.

Section III. Hazards Identification	
Acute Health Effects	Harmful if ingested or inhaled. Minimize exposure to this material. Absorption into the body leads to the formation of methemoglobin which in sufficient concentration causes cyanosis. Severe overexposure can result in injury or death. Irritating to eyes and skin on contact. Inhalation causes irritation of the lungs and respiratory system. Inflammation of the eye is characterized by redness, watering, and itching. Skin inflammation is characterized by itching, scaling, reddening or occasionally blistering. Follow safe industrial hygiene practices and wear proper protective equipment when handling this compound.
Chronic Health Effects	CARCINOGENIC EFFECTS: (as Urea) Carcinogenic effects: Mouse TDLo (oral) 394 g/kg/1Y-C Neoplastic effects: RatTDLo (oral) 821 g/kg/1Y-C MUTAGENIC EFFECTS: (as Urea) DNA Inhibition: Human (lymphocyte) 600 mmol/L Cytogenetic Analysis: Human (leukocyte) 50 mmol/L (as Potassium Hydroxide) Cytogenetic Analysis: Hamster (ovary) 12 mmol/L TERATOGENIC EFFECTS: (as Urea) Monkey TDLo (intrauterine) 6 g/kg (18W preg) Reproductive system: (as Urea) Women TDLo (intraplacental) 1400 mg/kg (16W preg) Only selected Registry of Toxic Effects of Chemical Substances (RTECS) data is presented here. See actual entry in RTECS for complete information.

Section IV. First Aid Measures

Eye Contact	Check for and remove any contact lenses. DO NOT use an eye ointment. Flush eyes with running water for a minimum of 15 minutes, occasionally lifting the upper and lower eyelids. Seek immediate medical attention. Treat symptomatically and supportively.		
Skin Contact	If the chemical gets spilled on a clothed portion of the body, remove the contaminated clothes as quickly as possible, protecting your own hands and body. Place the victim under a deluge shower. If the chemical touches the victim's exposed skin, such as the hands: Gently and thoroughly wash the contaminated skin with running water and non-abrasive soap. Be particularly careful to clean folds, crevices, creases and groin. Seek immediate medical attention. Treat symptomatically and supportively. Wash contaminated clothing before reusing.		
Inhalation	Evacuate the victim to a safe area as soon as possible. Loosen tight clothing such as a collar, tie, belt or waistband. If breathing is difficult, administer oxygen. If the victim is not breathing, perform artificial respiration. Seek immediate medical attention. Treat symptomatically and supportively.		
Ingestion	Remove dentures if any. Wash out mouth with water. Examine the lips and mouth to ascertain whether the tissues are damaged, a possible indication that the toxic material was ingested; the absence of such signs, however, is not conclusive. Loosen tight clothing such as a collar, tie, belt or waistband. NEVER give an unconscious person anything to ingest. Seek immediate medical attention. Treat symptomatically and supportively.		

Section V. Fire and Explosion Data

Flammability	Non-flammable.	Auto-Ignition	Not available.
Flash Points	Not available.	Flammable Limits	Not available.
Combustion Products	carbon oxides (CO, CO ₂) , nitrogen oxides (NO, NO ₂ ...)		
Fire Hazards	Slightly flammable to flammable in presence of open flames and sparks, of heat.		
Explosion Hazards	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. No additional information is available regarding the risks of explosion.		
Fire Fighting Media and Instructions	SMALL FIRE: Use DRY chemicals, CO ₂ , water spray or foam. LARGE FIRE: Use water spray, fog or foam.		


Section VI. Accidental Release Measures

Spill Cleanup Instructions	Harmful liquid. Irritating liquid. Stop leak if without risk. Absorb with DRY earth, sand or other non-combustible material. Finish cleaning the spill by rinsing any contaminated surfaces with copious amounts of water. Prevent entry into sewers, basements or confined areas; dike if needed. Consult federal, state, and/or local authorities for assistance on disposal.
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Section VII. Handling and Storage

Handling and Storage Information	HARMFUL. IRRITANT. Minimize exposure. Keep away from heat and sources of ignition. When not in use, tightly seal the container and store in a cool and dark place. Avoid excessive heat and light. Do not breathe gas, fumes, vapor or spray. Avoid contact with eyes. In case of insufficient ventilation, wear suitable respiratory equipment. If you feel unwell, seek immediate medical attention and show the container or the label when possible. Treat symptomatically and supportively. Always store away from incompatible compounds such as oxidizing agents, alkalis (bases).
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Section VIII. 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	Face shield. Lab coat. Vapor respirator. Boots. Gloves. A MSHA/NIOSH approved respirator must be used to avoid inhalation of the product. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product.
	
Exposure Limits	(as Phosphoric Acid) OSHA PEL:8H TWA 1 mg/m ³ ACGIH TLV:TWA 1 mg/m ³ , STEL 3 mg/m ³ (as Potassium Hydroxide) ACGIH TLV: CL 2mg/m ³ Consult local authorities for acceptable exposure limits.

Section IX. Physical and Chemical Properties

Physical state @ 20°C	Pale yellow liquid.	Solubility	Not available.
Specific Gravity	1.27 (25°C, Water = 1)		
Molecular Weight	Not available.	Partition Coefficient	Not available.
Boiling Point	Not available.	Vapor Pressure	Not available.
Melting Point	Not available.	Vapor Density	Not available.
Refractive Index	Not available.	Volatility	Not available.
Critical Temperature	Not available.	Odor	Odorless.
Viscosity	Not available.	Taste	Not available.

Section X. Stability and Reactivity Data

Stability	The product is stable if stored under proper conditions. (See Section VII for instructions)
Conditions of Instability	Avoid excessive heat and light.
Incompatibilities	Incompatible with oxidizing agents, alkalis (bases).

Section XI. Toxicological Information

RTECS Number	Not available. (OM3756000: as Magnesium Nitrate, YR6250000: as Urea, TB6300000: as Phosphoric Acid, TT2100000: as Potassium Hydroxide, BR9050000: as Ammonium Nitrate)
Routes of Exposure	Eye contact. Skin contact. Inhalation. Ingestion.
Toxicity Data	Toxicity data of this product is not available. (as Magnesium Nitrate) Rat LD ₅₀ (oral) 5440 mg/kg (as Urea) Rat LD ₅₀ (oral) 8471 mg/kg Rat LD ₅₀ (intraperitoneal) >5 mg/kg Rat LD ₅₀ (intravenous) 5300 mg/kg (as Phosphoric Acid) Rat LD ₅₀ (oral) 1530 mg/kg Rabbit LD ₅₀ (dermal) 2740 mg/kg (as Potassium Hydroxide) Rat LD ₅₀ (oral) 273 mg/kg (as Ammonium Nitrate) Rat LD ₅₀ (oral) 2217 mg/kg
Chronic Toxic Effects	CARCINOGENIC EFFECTS: (as Urea) Carcinogenic effects: Mouse TDLo (oral) 394 g/kg/1Y-C Neoplastic effects: RatTDLo (oral) 821 g/kg/1Y-C MUTAGENIC EFFECTS: (as Urea) DNA Inhibition: Human (lymphocyte) 600 mmol/L Cytogenetic Analysis: Human (leukocyte) 50 mmol/L (as Potassium Hydroxide) Cytogenetic Analysis: Hamster (ovary) 12 mmol/L TERATOGENIC EFFECTS: (as Urea) Monkey TDLo (intrauterine) 6 g/kg (18W preg) Reproductive system: (as Urea) Women TDLo (intraplacental) 1400 mg/kg (16W preg) Only selected Registry of Toxic Effects of Chemical Substances (RTECS) data is presented here. See actual entry in RTECS for complete information.
Acute Toxic Effects	Harmful if ingested or inhaled. Minimize exposure to this material. Absorption into the body leads to the formation of methemoglobin which in sufficient concentration causes cyanosis. Severe overexposure can result in injury or death. Irritating to eyes and skin on contact. Inhalation causes irritation of the lungs and respiratory system. Inflammation of the eye is characterized by redness, watering, and itching. Skin inflammation is characterized by itching, scaling, reddening or occasionally blistering. Follow safe industrial hygiene practices and wear proper protective equipment when handling this compound.


Section XII. Ecological Information

Ecotoxicity	Not available.
Environmental Fate	Not available.

Section XIII. Disposal Considerations

Waste Disposal	Recycle, if possible. Consult your local or regional authorities. Observe all federal, state, and local regulations when disposing of this substance.
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Section XIV. Transport Information

UN Classification	CLASS 8: Corrosive.
PIN Number	UN3264
Proper Shipping Name	Corrosive liquid, acidic, inorganic, n.o.s.
Packing Group (PG)	III
UN Pictograms	

Section XV. Other Regulatory Information

TSCA Chemical Inventory (EPA)	Not available. (On TSCA list: as Magnesium Nitrate, Urea, Phosphoric Acid, Potassium Hydroxide and Ammonium Nitrate)
WHMIS Classification (Canada)	WHMIS CLASS E: Corrosive liquid.
EINECS/ELINCS Number (EEC)	Not available. (233-826-7: as Magnesium Nitrate, 200-315-5: as Urea, 231-633-2: as Phosphoric Acid, 215-181-3: as Potassium Hydroxide, 229-347-8: as Ammonium Nitrate)
EEC Risk Statements	R22- Harmful if ingested. R36/37/38- Irritating to eyes, respiratory system and skin.
Japanese Regulatory Data	Not available.

Section XVI. Other Information**Version : T1.2****Validated on 2006/8/21.****Printed 2007/02/28.****Notice to Reader**

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