

SAFETY DATA SHEET

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier 4-Cyanopyridine
Synonyms: Isonicotinonitrile, 4-Pyridinecarbonitrile
Chemical Abstracts Registry No: 100-48-1
REACH Registration Number: 01-2120764205-57-0000

1.2. Relevant identified uses of the substance or mixture and uses advised against

chemical intermediate

1.3. Details of the supplier of the safety data sheet

Vertellus Integrated Pyridines LLC
201 North Illinois Street, Suite 1800
Indianapolis, Indiana 46204 USA
1-317-247-8141

Vertellus Specialty Chemicals (Nantong) Co., Ltd.
#9 Shengkai Road NETDZ
Nantong, Jiangsu, China. 226009
Phone: 86-513-83591318
Emergency Phone: 86 25 85477110

Only Representative for EU REACH Registration:

Vertellus Specialties Belgium NV
Havenlaan 86 C Bus 204
B 1000 Brussels
Belgium
Phone: +32 3 250-6188

e-mail Address: sds@vertellus.com

1.4. Emergency telephone number **Vertellus:** 1-317-247-8141
CHEMTREC (USA): +1-800-424-9300 (collect calls accepted)
CHEMTREC (International): +1-703-527-3887 (collect calls accepted)
NRCC (China): +86 25 85477110

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture (According to Regulation (EC) No 1272/2008, 29 CFR 1910.1200 and the Globally Harmonized System)

Serious Eye Irritation Category 2
Acute Toxicity Oral Category 4

2.2. Label elements

Hazard Symbols (Pictogram):



Signal Word: Warning
Hazard Precautions: H302 - Harmful if swallowed.

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Prevention Precautionary Statements: H319 - Causes serious eye irritation.
P264 - Wash hands thoroughly after handling.
P270 - Do not eat, drink or smoke when using this product.
P280 - Wear protective gloves/protective clothing/eye protection/face protection.

First Aid Precautionary Statements: P305+P351+P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P337+P313 - If eye irritation persists: Get medical advice/attention.

Storage Precautionary Statements: Not required.

2.3. Other hazards

Other Hazards: May present a dust explosion hazard in some circumstances.

SECTION 3: Composition/information on ingredients

3.1. Substances or 3.2. Mixtures

Ingredient	CAS Number	Concentration (weight %)	EC Number	CLP Inventory/ Annex VI	EU CLP Classification (1272/2008)
4-Cyanopyridine	100-48-1	~ 100	202-856-2	Not listed.	Acute Tox. 4; H302 Eye Irrit. 2; H319

NOTE: See Section 8 for exposure limit data for these ingredients. See Section 15 for trade secret information (where applicable).

SECTION 4: First aid measures

4.1. Description of first aid measures

Skin Contact: Wash with soap and water. Get medical attention if irritation develops or persists.

Eye Contact: Rinse eyes immediately with large amounts of water for at least 15 minutes, occasionally lifting the eyelids. GET MEDICAL ATTENTION.

Inhalation: Remove from exposure area to fresh air immediately. If breathing has stopped, give artificial respiration. GET MEDICAL ATTENTION.

Ingestion: If swallowed, do not induce vomiting. Get prompt medical attention. Do not give anything by mouth to an unconscious person.

4.2 Most important symptoms and effects, both acute and delayed

Acute: Can cause eye irritation, including redness and tearing.

Delayed Effects: None known.

4.3. Indication of any immediate medical attention and special treatment needed

Note to Physician: No specific indications. Treatment should be based on the judgment of the physician in response to the reactions of the patient.

SECTION 5: Firefighting measures

5.1. Extinguishing media

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Appropriate Extinguishing Media: Use water fog, alcohol resistant foam, carbon dioxide, or dry chemical.

5.2. Special hazards arising from the substance or mixture

Hazardous Products of Combustion: Toxic vapors may be released upon thermal decomposition (cyanides, nitrogen oxides, carbon monoxide).

Potential for Dust Explosion: No data available -- handle in a manner that prevents generation of potentially explosive dust.

Special Flammability Hazards: This product is an organic solid. As such, in its finely divided form, this product has the potential to present a dust explosion hazard under certain conditions, although no dust explosion data is currently available. Handle this product in a manner that prevents dust generation and accumulation, and refer to National Fire Protection Association (NFPA) Standard 654 for further information on prevention of dust explosions.

5.3. Advice for firefighters

Basic Fire Fighting Guidance: Wear self-contained breathing apparatus and full protective clothing (i.e., Bunker gear). Skin and eye contact should be avoided. Normal fire fighting procedures may be used.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Evacuation Procedures: Isolate the hazard area and deny entry to unnecessary and unprotected personnel.

Special Instructions: See Section 8 for personal protective equipment recommendations. Remove all contaminated clothing to prevent further absorption. Decontaminate affected personnel using the first aid procedures in Section 4. Leather shoes that have been saturated must be discarded.

6.2. Environmental precautions

Prevent releases to soils, drains, sewers and waterways.

6.3. Methods and material for containment and cleaning up

Remove all ignition sources. Ventilate the area of spill or leak. Wear protective equipment during clean-up. Material can then be collected for later disposal. After collection of material, flush area with water. Dispose of the material in accordance with standard practice for disposal of potentially hazardous materials as required by applicable federal, state or local laws.

6.4. Reference to other sections

Refer to section 8 for information on selecting personal protective equipment. Refer to section 13 for information on spilled product, absorbent and clean up material disposal instructions.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for Unique Hazards: Not applicable.

Practices to Minimize Risk: Wear appropriate protective equipment when performing maintenance on contaminated equipment. Wash hands thoroughly before eating or smoking after handling this material. Do not eat, drink or smoke in work areas. Prevent contact with incompatible materials. Avoid spills and keep away from drains. Handle in a manner to prevent generation of aerosols, vapors or dust clouds.

Special Handling Equipment: Not applicable.

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7.2. Conditions for safe storage, including any incompatibilities

Storage Precautions & Recommendations:	Maintain dry, ventilated conditions for storage. Protect containers against physical damage. Keep away from strong acids, strong bases and oxidizing agents.
Dangerous Incompatibility Reactions:	Avoid strong acids, strong bases, and oxidizing agents.
Incompatibilities with Materials of Construction:	None known

7.3. Specific end use(s)

If a chemical safety assessment has been completed an exposure scenario is attached as an annex to this Safety Data Sheet. Refer to this annex for the specific exposure scenario control parameters for uses identified in subsection 1.2.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Occupational Exposure Limit	Not established
Air Monitoring Method:	Not required

8.2. Exposure controls

Also see the annex to this SDS (if applicable) for specific exposure scenario controls.

Other Engineering Controls:	All operations should be conducted in well-ventilated conditions. Local exhaust ventilation should be provided.
Personal Protective Equipment:	Where overexposures are a concern, use NIOSH-approved chemical cartridge respirator or supplied-air breathing equipment as necessary. Chemical goggles; face shields if necessary. Impervious clothing and boots. Neoprene, nitrile or PVC-coated gloves (Standard EN 374). Safety glasses or chemical goggles (Standard EN166). Chemical resistant clothing (Standard EN368).
Respirator Caution:	Observe OSHA regulations for respirator use (29 CFR 1910.134). Air-purifying respirators must not be used in oxygen-deficient atmospheres.
Thermal Hazards:	Not applicable.
Environmental Exposure Controls:	The level of protection and types of controls necessary will vary depending upon potential exposure conditions. Select controls based on a risk assessment of local circumstances. If user operations generate dust, fumes, gas, vapor or mist, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Appearance, State & Odor (ambient temperature):	White to tan solid with a sharp odor.		
Vapor Pressure:	0.314 mm Hg @ 25°C	Evaporation Rate:	Not determined
Specific Gravity or Density:	1	Vapor Density (air = 1):	No data available.

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Boiling Point:	214 °C	Freezing / Melting Point:	79 °C
Solubility in Water:	4 g/100 mL H ₂ O @ 20°C	Octanol / Water Coefficient:	0.46
pH:	~ 6 in 10 g/L H ₂ O @ 22°C	Odor Threshold:	No data available.
Viscosity:	No data available.	Autoignition Temperature:	No data available.
Flash Point and Method:	179°F (82°C) Tag Open Cup	Flammable Limits:	No data available.
Flammability (solid, gas):	No data available.	Decomposition Temperature:	No data available.
Explosive Properties:	Not explosive.	Oxidizing Properties:	Not an oxidizer.

9.2. Other information

Not applicable.

SECTION 10: Stability and reactivity

<u>10.1. Reactivity</u>	Not classified as dangerously reactive.
<u>10.2. Chemical stability</u>	Stable
<u>10.3. Possibility of hazardous reactions</u>	Will not occur.
<u>10.4. Conditions to avoid</u>	Avoid static discharge and generation of dust. Avoid ignition sources, and sources of heat.
<u>10.5. Incompatible materials</u>	Avoid strong acids, strong bases, and oxidizing agents.
<u>10.6. Hazardous decomposition products</u>	Toxic vapors may be released upon thermal decomposition (cyanides, nitrogen oxides, carbon monoxide).

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute Oral LD ₅₀ :	Oral LD ₅₀ (rat) = 710 mg/kg	4-Cyanopyridine
Acute Dermal LD ₅₀ :	Dermal LD ₅₀ (rabbit) > 20000 mg/kg	4-Cyanopyridine
Acute Inhalation LC ₅₀ :	No data available.	
Skin Irritation:	May cause slight irritation.	
Eye Irritation:	Causes eye irritation.	
Skin Sensitization:	Not expected to be a sensitizer.	
Mutagenicity:	No evidence of mutagenic effects	
Reproductive / Developmental Toxicity:	No evidence of reproductive effects	
Carcinogenicity:	This material is not listed by IARC, NTP or OSHA as a carcinogen. No test data is available that indicates this material is a carcinogen.	

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Target Organs:	None known
Aspiration Hazard:	Based on physical properties, not likely to be an aspiration hazard.
Primary Route(s) of Exposure:	Skin contact and absorption, eye contact, and inhalation. Ingestion is not likely to be a primary route of exposure.
Most important symptoms and effects, both acute and delayed	Can cause eye irritation, including redness and tearing. Delayed Effects: None known.
Additive or Synergistic effects:	None known.

SECTION 12: Ecological information

<u>12.1. Toxicity</u>	No data available.	4-Cyanopyridine
<u>12.2. Persistence and degradability</u>	Readily biodegradable in aerobic screening assays using activated sludge inoculum (OECD 301C). Based on environmental modeling, this material is not expected to be persistent in the environment, is not expected to bioaccumulate, and is not expected to be chronically toxic to fish.	
<u>12.3. Bioaccumulative potential</u>	No data available	
<u>12.4. Mobility in soil</u>	No data available	
<u>12.5. Results of PBT and vPvB assessment</u>	No data available.	
<u>12.6. Other adverse effects</u>	Environmental modeling predicts that this material will not present a significant toxicity risk to aquatic life.	

SECTION 13: Disposal considerations

<u>13.1. Waste treatment methods</u>	
US EPA Waste Number:	Non-Hazardous
Waste Classification: (per US regulations)	The waste may be classified as "special" or hazardous per State regulations.
Waste Disposal:	NOTE: Generator is responsible for proper waste characterization. State hazardous waste regulations may differ substantially from federal regulations. Dispose of this material responsibly, and in accordance with standard practice for disposal of potentially hazardous materials as required by applicable international, national, regional, state or local laws, and environmental protection duty of care principles. Do NOT dump into any sewers, on the ground, or into any body of water. For disposal within the EC, the appropriate classification code according to the European Community List of Wastes should be used. Note that disposal regulations may also apply to empty containers and equipment rinsates.

SECTION 14: Transport information

The following information applies to all shipping modes (DOT/IATA/ICAO/IMDG/ADR/RID/ADN), unless otherwise indicated:

14.1. UN number	Not applicable	14.2. UN proper shipping name	Chemicals, n.o.s. (4-Cyanopyridine)
14.3. Transport hazard class(es)	Not applicable	14.4. Packing group	Not applicable
14.5. Environmental hazards	Not applicable		

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NA Emergency Guidebook Numbers: Not applicable
IMDG EMS: Not applicable;
14.7. Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code Not applicable.

SECTION 15: Regulatory information

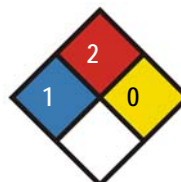
15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

Chemical Inventory Lists:	Status:		
USA TSCA:	Listed	EINECS:	202-856-2
Canada(DSL/NDSL):	NDSL	Japan:	(5)-743
Korea:	KE-29933	Australia:	Listed
China:	02906	Philippines:	Listed
Taiwan:	Listed	New Zealand:	Listed
German Water Hazard Classification:	No data available.		
SARA 313:	Not listed.		
Reportable Quantities:	Not applicable.		
State Regulations:	Not applicable.		
Other Regulatory Listings:	Not applicable.		

HMIS IV:

HEALTH	1
FLAMMABILITY	2
PHYSICAL HAZARD	0

NFPA:



15.2. Chemical safety assessment

Not applicable.

SECTION 16: Other information

Legend of Abbreviations:

<p>ACGIH = American Conference on Governmental Industrial Hygienists. CAS = Chemical Abstracts Service. CFR = Code of Federal Regulations. DSL/NDSL = Domestic Substances List/Non-Domestic Substances List. EC = European Community. EINECS = European Inventory of Existing Commercial Chemical Substances. ELINCS = European List of Notified Chemical Substances. EU = European Union. GHS = Globally Harmonized System. LC = Lethal Concentration.</p>	<p>LD = Lethal Dose. NFPA = National Fire Protection Association. NIOSH = National Institute of Occupational Safety and Health. NTP = National Toxicology Program. OSHA = Occupational Safety and Health Administration PEL = Permissible Exposure Limit. RQ = Reportable Quantity. SARA = Superfund Amendments and Reauthorization Act of 1986. TLV = Threshold Limit Value. WHMIS = Workplace Hazardous Materials Information System.</p>
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Important Note: Please note that the information contained herein is furnished without warranty of any kind. Users should consider these data only as a supplement to other information gathered by them and must make independent determinations of suitability and completeness of information from all sources to assure proper use and disposal of these materials and the safety and health of employees

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and customers. Recipients are advised to confirm in advance of need that the information is current, applicable, and suitable to their circumstances. The information contained herein may change without prior notice. THIS SAFETY DATA SHEET SUPERSEDES ALL PREVIOUS EDITIONS.

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