

SAFETY DATA SHEET

(according to (EC) 1907/2006)

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

1.1. Product identifier 2-Cyanopyridine

Synonyms: Pyridine, 2-cyano

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, IN 46204
317-247-8141

e-mail Address: msds@vertellus.com

1.4. Emergency telephone number

Vertellus: 1-317-247-8141

CHEMTREC (USA): 1-800-424-9300 (collect calls accepted); (Int'l): 1-703-527-3887 (collect calls accepted; 011 prefix not needed)

SECTION 2: Hazards identification

HMIS Rating	
HEALTH	2
FLAMMABILITY	1
REACTIVITY	0

2.1. Classification of the substance or mixture

(According to Regulation (EC) No 1272/2008)

Serious Eye Damage/Eye Irritation Category 2

Acute Toxicity Oral Category 4

(According to Directive 67/548/EEC)

Symbol: Xi, Xn

Risk Phrases: R36: Irritating to the eyes.

R22: Harmful if swallowed.

Safety Phrases: S25: Avoid contact with the eyes.

S26: In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

S36/37/39: Wear suitable protective clothing, gloves and eye/face protection.

2.2. Label elements

SAFETY DATA SHEET

Hazard Symbols (Pictogram):



Signal Word:
Warning

Hazard Precautions:

H302 - Harmful if swallowed.

H319 - Causes serious eye irritation.

Prevention Precautionary Statements:

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:

P301+P312 - IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell.

P305+P351+P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P330 - Rinse mouth.

P337+P313 - If eye irritation persists: Get medical advice/attention.

Storage Precautionary Statements:

Not required.

Disposal Precautionary Statements:

P501 - Dispose of contents/container in accordance with local/regional/national/international regulation for hazardous wastes.

2.3. Other hazards

Signs and Symptoms of Potential Overexposure: 2-Cyanopyridine is irritating to the nasal and respiratory tracts. Absorption can occur from the gastrointestinal tract, the skin, and the respiratory tract. Symptoms of overexposure to pyridine derivatives may include weakness, dizziness, headache, nausea, sleeplessness, loss of appetite, and unconsciousness. Causes moderate eye irritation. Extended exposure (e.g., from saturated clothing) may lead to irritation, skin burns and/or systemic poisoning. Contact with this material may cause mild to moderate skin irritation and eye/eyelid irritation. Based on data for structurally similar compounds, 2-cyanopyridine is considered to be slightly to moderately toxic via dermal absorption and moderately toxic via oral route. Symptoms seen after ingestion are expected to be essentially the same as those listed above.

Primary Route(s) of Exposure: Skin contact and absorption, eye contact, and inhalation. Ingestion is not likely to be a primary route of exposure.

SAFETY DATA SHEET

Medical Conditions Aggravated by Exposure: Persons with pre-existing skin, liver, or kidney disorders may be at increased risk from overexposure to this material. This is not likely to be a problem when appropriate procedures are used to minimize exposure.

SECTION 3: Composition/information on ingredients

3.1. Substances or 3.2. Mixtures

Ingredient	CAS Number	Concentration (%)	EINECS / ELINCS	CLP Inventory/ Annex VI	EU DSD Classification (67/548/EEC)	EU CLP Classification (1272/2008)
2-Cyanopyridine	100-70-9	~ 100	202-880-3	Not listed.	Xi, Xn R36- R22	Acute Tox. 4; H302 Eye Irrit. 2; H319

NOTE: See Section 8 of this MSDS for exposure limit data for these ingredients.
 See Section 15 of this MSDS for trade secret information (where applicable).
 See Section 16 of this MSDS for the full text of the R-phrases above.

SECTION 4: First aid measures

4.1. Description of first aid measures

Skin Contact: Wash exposed area twice with soap and water. The exposed area should be examined by medical personnel if irritation or pain persists after the area has been washed.

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. Keep affected person warm and at rest. GET MEDICAL ATTENTION.

Ingestion: If conscious, induce vomiting to prevent further absorption. Give oxygen if respiration is shallow. GET MEDICAL ATTENTION. Do not give anything by mouth to an unconscious person.

4.2. Most important symptoms and effects, both acute and delayed

Acute: 2-Cyanopyridine is irritating to the nasal and respiratory tracts. Absorption can occur from the gastrointestinal tract, the skin, and the respiratory tract. Symptoms of overexposure to pyridine derivatives may include weakness, dizziness, headache, nausea, sleeplessness, loss of appetite, and unconsciousness. Causes moderate eye irritation. Extended exposure (e.g., from saturated clothing) may lead to irritation, skin burns and/or systemic poisoning. Contact with this material may cause mild to moderate skin irritation and eye/eyelid irritation. Based on data for structurally similar compounds, 2-cyanopyridine is considered to be slightly to moderately toxic via dermal absorption and moderately toxic via oral route. Symptoms seen after ingestion are expected to be essentially the same as those listed above.

Delayed Effects: None known.

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

Thermal Exposure: not applicable

Note to Physician: Some pyridine derivatives are rapidly absorbed through the skin. No specific antidote known. Treatment should be based on the judgment of the physician in response to the reactions of the patient.

SECTION 5: Firefighting measures

SAFETY DATA SHEET

5.1. Extinguishing media

Appropriate Extinguishing Media: Water fog, foam, alcohol foam, carbon dioxide, 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: Not applicable

Special Flammability Hazards: Not applicable

5.3. Advice for firefighters

Basic Fire Fighting Guidance: Firefighters should wear self-contained breathing apparatus and full protective equipment. Skin and eye contact should be avoided.

Normal fire fighting procedures may be used.

Flammability Classification (OSHA): Combustible Liquid - Class III B

NFPA Rating



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

Special Instructions: 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. Remove all contaminated clothing to prevent further absorption. Decontaminate affected personnel using the first aid procedures in Section 4.

6.2. Environmental precautions

Prevent releases to soils, drains, sewers, and waterways.

6.3. Methods and material for containment and cleaning up

Containment Techniques and Clean-up Procedures: 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. For small spills, use suitable absorbent material and collect for later disposal. For large spills, the area may require diking to contain the spill. Product will solidify at approximately 79°F.

Special Reporting Requirements: Notify appropriate authorities if required by regulation. See Section 15 for additional information.

6.4. Reference to other sections



SAFETY DATA SHEET

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. Wear appropriate protective equipment when performing maintenance on contaminated equipment.
Special Handling Equipment:	Not applicable.

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. Keep away from heat, sparks, and flame. Long term storage (i.e., more than one year) in mild steel containers may lead to discoloration of the product, affecting product quality.
Dangerous Incompatibility Reactions:	Acids, alkalis, oxidizing agents.
Incompatibilities with Materials of Construction:	Not applicable

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

Exposure Limits (United States):	OSHA PEL:	Not established	ACGIH TLV:	Not established
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8.2. Exposure controls

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

Personal Protective Equipment:	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. Contact lenses should not be worn when handling this material. Do not smoke or eat in areas where this material is handled.
Respirator Caution:	Observe OSHA regulations for respirator use (29 CFR 1910.134). Air-purifying respirators must not be used in oxygen-deficient atmospheres.
Ventilation:	All operations should be conducted in well-ventilated conditions. Local exhaust ventilation should be provided.
Other Engineering Controls:	All appropriate engineering controls should be used to minimize exposure potential. Use exhaust ventilation to keep airborne concentrations below exposure limits.
Thermal Hazards:	Not applicable.
Additive or Synergistic Effects:	None known.

SAFETY DATA SHEET

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Appearance, State & Odor (ambient temperature):	Straw colored liquid (>26°C); white to yellow solid (<26°C)		
Molecular Formula:	C6H4N2	Molecular Weight:	104.11
Vapor Pressure:	< 1.00 mm Hg	Evaporation Rate:	Not determined
Specific Gravity or Density:	1.08	Vapor Density (air = 1):	3.58
Boiling Point:	216 °C 421 °F	Freezing / Melting Point:	26 °C
Solubility in Water:	slightly soluble; 7 g/100 mL water@ 20°C	Octanol / Water Coefficient:	No data available.
pH:	No data available.	Odor Threshold:	No data available.
Viscosity:	No data available.	Autoignition Temperature:	No data available.
Flash Point and Method:	220°F (104°C) TOC	Flammable Limits:	No data available. (LEL) – No data available. (UEL)

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>	Incompatible materials
<u>10.5. Incompatible materials</u>	Acids, alkalies, 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) (est) 700 - 1100 mg/kg	2-Cyanopyridine
Acute Dermal LD ₅₀ :	Dermal LD ₅₀ (rabbit) Estimated > 2000 mg/kg	2-Cyanopyridine
Acute Inhalation LC ₅₀ :	No data available.	
Skin Irritation:	Mildly irritating to skin.	
Skin Sensitization:	No data available.	
Eye Irritation:	Moderately irritating to eyes.	



SAFETY DATA SHEET

Target Organs:	No data available.
Carcinogenicity:	No data available.
Teratogenicity:	No data available.
Reproduction:	No data available.
Neurotoxicity:	No data available.
Mutagenicity:	No data available.
Additional Toxicity Information:	No data are available for this material; therefore, assumptions were made based on structurally similar compounds.

SECTION 12: Ecological information

<u>12.1. Toxicity</u>	No data available.
<u>12.2. Persistence and degradability</u>	No data
<u>12.3. Bioaccumulative potential</u>	No data
<u>12.4. Mobility in soil</u>	No data
<u>12.5. Results of PBT and vPvB assessment</u>	No data available.
<u>12.6. Other adverse effects</u>	No data available.

German Water Hazard Classification: No data available.

Component Name:
No data available.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

US EPA Waste Number:	Not applicable
Waste Classification: (per US regulations)	Non-Hazardous NOTE: Generator is responsible for proper waste characterization. State (USA) hazardous waste regulations may differ substantially from federal (USA) regulations.
Waste Disposal:	Dispose of this material in accordance with standard practice for disposal of potentially hazardous materials as required by applicable international, national, regional, state or local laws. Do NOT dump into any sewers, on the ground, or into any body of water. For disposal within the EC, the appropriate code according to the European Waste Catalogue (EWC) should be used. Note that disposal regulations may also apply to empty containers and equipment rinsates.

SECTION 14: Transport information

<u>14.1. UN number</u>	Not applicable
<u>14.2. UN proper shipping name</u>	Chemicals, n.o.s. (2-Cyanopyridine)



SAFETY DATA SHEET

<u>14.3. Transport hazard class(es)</u>	Not applicable
<u>14.4. Packing group</u>	Not applicable
<u>14.5. Environmental hazards</u>	Not applicable
<u>14.6. Special precautions for user</u>	No data available.
NA Emergency Guidebook Numbers:	Not applicable
	IMDG EMS: Not applicable
<u>14.7. Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code</u>	Not applicable.

SECTION 15: Regulatory information

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

OSHA Hazards: Health: Irritant. Physical: Not applicable.

WHMIS Classification: Class D, Division 2, Subdivision B: Irritant.

Chemical Inventory Lists:	Status
TSCA:	Present
EINECS:	202-880-3
Canada(DSL/NDSL):	DSL
Japan:	(5)-3714
Korea:	Not listed.
Australia:	Present
New Zealand:	Present
China:	Present
Philippines:	Present
Switzerland:	Not listed.

New Zealand GHS Classification: Acute toxicity - Oral - Category 4: H302 Harmful if swallowed. (Approval: HSR004999); Serious eye damage/eye Irritation - Category 2A: H319 Causes serious eye irritation. (Approval: HSR004999); Terrestrial Vertebrate Ecotoxicity - Category 3: H433 Harmful to terrestrial vertebrates. (Approval: HSR004999)

Japan GHS Classification: Not classified by this country.

Korea (MOL) GHS Classification: Not classified by this country.

Australia GHS Classification: Not classified by this country.

Taiwan GHS Classification: Not classified by this country.

Indonesia GHS Classification: Not classified by this country.

SARA 313: Not listed.

Component Name:
Not listed.



SAFETY DATA SHEET

15.2. Chemical safety assessment

Not applicable.

SECTION 16: Other information

Full text of R phrases in Section 3:

R36: Irritating to the eyes.
R22: Harmful if swallowed.

Legend of abbreviations:

ACGIH = American Conference on Governmental Industrial Hygienists.
CAS = Chemical Abstracts Service.
CERCLA = Comprehensive Environmental, Response, Compensation and Liability Act (1990).
CFR = Code of Federal Regulations.
DSL/NDSL = Domestic Substances List/Non-Domestic Substances List.
EC = European Community.
EEC = European Economic 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.
LD = Lethal dose.
MOL = Ministry of Labor.
NEMA = National Emergency Management Agency.
NFPA = National Fire Protection Association.
NIOSH = National Institute of Occupational Safety and Health.
NTP = National Toxicological 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.

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 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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SAFETY DATA SHEET

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