



SAFETY DATA SHEET

(according to (EC) 1907/2006)

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

1.1. Product identifier 1,3-Di-4-Piperidylpropane (DI-PIP® Amine)

Synonyms: DI-PIP® Amine

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)

Skin Corrosion/Irritation Category 2

Serious Eye Damage/Eye Irritation Category 2

Specific Target Organ Systemic Toxicity Single Exposure Category 3

Acute Toxicity Oral Category 4

Environmental Chronic Category 4

(According to Directive 67/548/EEC)

Symbol: Xi, Xn

Risk Phrases: R22: Harmful if swallowed.

R36/37/38: Irritating to eyes, respiratory system and skin.

R53: May cause long term adverse effects in the aquatic environment.

Safety Phrases: S25: Avoid contact with the eyes.

S26: In case of contact with eyes, rinse immediately with plenty of water and

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seek medical advice.

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

S45: In case of accident or if you feel unwell, seek medical advice immediately.

S56: Dispose of this material and its container to hazardous or special waste collection point.

2.2. Label elements

Hazard Symbols (Pictogram):



Signal Word:

Warning

Hazard Precautions:

H302 - Harmful if swallowed.

H315 - Causes skin irritation.

H319 - Causes serious eye irritation.

H335 - May cause respiratory irritation.

H413 - May cause long lasting harmful effects to aquatic life.

Prevention Precautionary Statements:

P261 - Avoid breathing dust/fume/gas/mist/vapours/spray.

P264 - Wash hands thoroughly after handling.

P270 - Do not eat, drink or smoke when using this product.

P271 - Use only outdoors or in a well-ventilated area.

P273 - Avoid release to the environment.

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.

P302+P352 - IF ON SKIN: Wash with plenty of soap and water.

P304+P340 - IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.

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

P312 - Call a POISON CENTER or doctor/physician if you feel unwell.

P321 - Specific treatment (see supplemental information on this label).

P330 - Rinse mouth.

P332+P313 - If skin irritation occurs: Get medical advice/attention.

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

P362 - Take off contaminated clothing and wash before reuse.

Storage Precautionary Statements:

P403+P233 - Store in a well-ventilated place. Keep container tightly closed.



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P405 - Store locked up.

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: 1,3-Di-4-Piperidylpropane is expected to be severely irritating to skin, eyes, and the respiratory tract, but does not meet the US DOT criteria for corrosivity when tested per Agency protocols. This material is considered toxic by oral exposure. Some pyridine derivatives may be readily absorbed through the skin; extended exposure (e.g., from saturated clothing) may lead to systemic effects. Symptoms may include headache, dizziness, nausea, nervousness, weakness, narcosis, sleeplessness, loss of appetite and possibly loss of consciousness. Symptoms seen after ingestion or inhalation overexposures are expected to be essentially the same as those listed previously.

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

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. 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)
1,3-Di-4-Piperidylpropane	16898-52-5	~ 100	240-941-6	Not listed.	Xn, Xi R22- R36/37/38- R53	Aquatic Chronic 4; H413 Acute Tox. 4; H302 Eye Irrit. 2; H319 Skin Irrit. 2; H315 STOT SE 3; H335

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. Get medical attention if irritation

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- 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. Keep affected person warm and at rest. GET MEDICAL ATTENTION.
- Ingestion:** If swallowed, contact physician or poison control center immediately. 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:** 1,3-Di-4-Piperidylpropane is expected to be severely irritating to skin, eyes, and the respiratory tract, but does not meet the US DOT criteria for corrosivity when tested per Agency protocols. This material is considered toxic by oral exposure. Some pyridine derivatives may be readily absorbed through the skin; extended exposure (e.g., from saturated clothing) may lead to systemic effects. Symptoms may include headache, dizziness, nausea, nervousness, weakness, narcosis, sleeplessness, loss of appetite and possibly loss of consciousness. Symptoms seen after ingestion or inhalation overexposures are expected to be essentially the same as those listed previously.
- Delayed Effects:** None known.

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

- Thermal Exposure:** Not applicable.
- 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

Appropriate Extinguishing Media: Water fog Foam Carbon dioxide Dry chemical

5.2. Special hazards arising from the substance or mixture

- Hazardous Products of Combustion:** Toxic fumes 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:** Not applicable.

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.
- Flammability Classification (OSHA):** Not applicable.

NFPA Rating



SECTION 6: Accidental release measures



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

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. 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 and oxidizing agents.
Dangerous Incompatibility Reactions:	Avoid contact with strong acids 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



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8.1. Control parameters

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

8.2. Exposure controls

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

Personal Protective Equipment: Where overexposures are a concern, use NIOSH-approved dust/mist respirator as necessary. Safety glasses or chemical goggles. Neoprene, nitrile or PVC-coated gloves. Work uniforms or impervious clothing and boots.

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. 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. All appropriate engineering controls should be used to minimize exposure potential.

Thermal Hazards: Not applicable.

Additive or Synergistic Effects: None known.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Appearance, State & Odor (ambient temperature):	White to off-white flaked solid with a musty, caustic odor.		
Molecular Formula:	C13H26N2	Molecular Weight:	210.36
Vapor Pressure:	< 0.1 mm Hg @ 25°C	Evaporation Rate:	Not applicable
Specific Gravity or Density:	0.9	Vapor Density (air = 1):	Not available.
Boiling Point:	327 °C	Freezing / Melting Point:	66 °C
Solubility in Water:	116 g/L @ 20°C	Octanol / Water Coefficient:	3.36 (estimated)
pH:	> 7	Odor Threshold:	Not available.
Viscosity:	Not available.	Autoignition Temperature:	Not available.
Flash Point and Method:	279°F (137°C) Tag Open Cup	Flammable Limits:	Not available. (LEL) – Not available. (UEL)

9.2. Other information

Not applicable.

SECTION 10: Stability and reactivity

10.1. Reactivity

Not classified as dangerously reactive.

10.2. Chemical stability

Stable Materials containing similar structural groups are normally stable



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<u>10.3. Possibility of hazardous reactions</u>	Not expected to occur.
<u>10.4. Conditions to avoid</u>	Avoid static discharge and generation of dust.
<u>10.5. Incompatible materials</u>	Avoid contact with strong acids and oxidizing agents.
<u>10.6. Hazardous decomposition products</u>	Toxic fumes 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 LD50 (rat) = 440 mg/kg	1,3-Di-4-Piperidylpropane
Acute Dermal LD ₅₀ :	Dermal LD50 (rabbit) > 2000 mg/kg	1,3-Di-4-Piperidylpropane
Acute Inhalation LC ₅₀ :	Not available.	1,3-Di-4-Piperidylpropane
Skin Irritation:	Moderately to severely irritating to skin.	
Skin Sensitization:	No data available.	
Eye Irritation:	Severely irritating to eyes.	
Target Organs:	As a class, some pyridines have been shown to be hepatotoxins (cause liver damage) with chronic overexposure by any route.	
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.	
Teratogenicity:	No data available.	
Reproduction:	No data available.	
Neurotoxicity:	No data available.	
Mutagenicity:	No data available.	
Additional Toxicity Information:	1,3-Di-4-Piperidylpropane was negative for skin sensitization effects in the Buehler Topical Closed Patch Assay.	

SECTION 12: Ecological information

<u>12.1. Toxicity</u>	Not available.
<u>12.2. Persistence and degradability</u>	No data Based on structure-activity relationships, this material is expected to biodegrade, though perhaps slowly (weeks to months). Not expected to bioaccumulate.
<u>12.3. Bioaccumulative potential</u>	Not expected to bioconcentrate in aquatic species.
<u>12.4. Mobility in soil</u>	No data
<u>12.5. Results of PBT and vPvB assessment</u>	Not available.
<u>12.6. Other adverse effects</u>	No data available.

German Water Hazard Classification: Not available.

Component Name:

Not available.



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SECTION 13: Disposal considerations

13.1. Waste treatment methods

US EPA Waste Number:	Non-Hazardous
Waste Classification: (per US regulations)	The waste may be classified as "special" or hazardous per State regulations. 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. (1,3-Di-4-Piperidylpropane)
<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>	Not 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: Severe Irritant. Toxic (oral). Physical: Not applicable.

WHMIS Classification: Class D, Division 2, Subdivision B: Irritant.
Class D, Division 1, Subdivision B: Toxic Material.

Chemical Inventory Lists: Status
TSCA: Present
EINECS: 240-941-6
Canada(DSL/NDSL): DSL
Japan: (5)-3660; (5)-5660



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Korea: KE-29291
Australia: Present
New Zealand: Not listed.
China: Present
Philippines: Present
Switzerland: No

New Zealand GHS Classification: Not classified by this country.

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.

Reportable Quantities: Not applicable.

State Regulations: Not applicable.

Other Regulatory Listings: Not applicable.

Component Name:

Not listed.

15.2. Chemical safety assessment

Not applicable.

SECTION 16: Other information

Full text of R phrases in Section 3: R22: Harmful if swallowed.
R36/37/38: Irritating to eyes, respiratory system and skin.
R53: May cause long term adverse effects in the aquatic environment.

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.



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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.

Precautionary Statement: 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.

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