



Safety Data Sheet (SDS)

Revision / Review Date: 6/1/15

1. Chemical Product and Company Identification

Product Name:	BIPYRIDINE
Distributed By:	HB Chemical 1665 Enterprise Parkway Twinsburg Oh 44087 Phone - 330-920-8023
SDS Prepared By (w Suppliers Input):	HB Chemical
Chemical Name / Family:	2,2'-Bipyridyl, 2,2'-Dipyridine, 2,2'-Dipyridyl
Molecular Formula:	C10H8N2
Molecular Weight via GPC, Mn:	156.18 g/mol
Product Use:	Flame Retardants
OSHA Status:	Hazardous
CAS No:	366-18-7
EC No:	206-674-4

For emergency health, safety, and environmental information, calls 330-920-8023

For emergency transportation information, in the United States: call CHEMTREC at 800-424-9300

2. Hazard(s) Identification

Warning:

Danger



Classification of the substance or mixture:

GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)
Acute toxicity, Oral (Category 3), H301
Acute toxicity, Dermal (Category 3), H311.

Hazard statement(s):

H301 + H311 Toxic if swallowed or in contact with skin.

Precautionary statement(s):

P264 Wash skin thoroughly after handling.
P270 Do not eat, drink or smoke when using this product.
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.
P301 + P310 + P330 IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician. Rinse mouth.
P302 + P352 + P312 IF ON SKIN: Wash with plenty of soap and water. Call a POISON CENTER or doctor/ physician if you feel unwell.
P362 Take off contaminated clothing and wash before reuse.

	P405 Store locked up. P501 Dispose of contents/ container to an approved waste disposal plant. Dust can be potential explosive at sufficient concentrations.
<u>Signs and Symptoms of Exposure:</u>	Irritation to the skin, eyes and respiratory system.
<u>Primary Routes of Entry:</u>	Ingesting and skin.
<u>Medical Conditions Generally Aggravated by Exposure:</u>	None known.
<u>Eye Contact:</u>	Irritating to eyes. Can causes burns.
<u>Skin Contact:</u>	Harmful and irritating to the skin. May be harmful if absorbed through the skin.
<u>Ingestion:</u>	Toxic if swallowed.
<u>Inhalation:</u>	Harmful by inhalation Irritating to respiratory system. Material is extremely destructive to the tissue of the mucous membranes and upper respiratory tract.
<u>NFPA Rating:</u>	Health -2, Flammability - 0, Reactivity - 0
<u>HMIS Hazard Ratings:</u>	Health-2 , Flammability - 0, Reactivity - 0
<u>HMIS limitation statement:</u>	The HMIS hazard ratings numbers are meant to give a quick indication of the relative hazards associated with the product. All of the information contained in the SDS should be consulted to assist with the safe handling of this material.
<u>Principal Hazardous Components:</u>	Not available.

3. Composition / Information on Ingredients

Weight Percent / Typical	Component Identity	CAS Registry Number
100%	2,2'-Bipyridyl	366-18-7

4. First Aid Measures

<u>Inhalation:</u>	If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.
<u>Eyes:</u>	Flush eyes with water as a precaution.
<u>Skin:</u>	Wash off with soap and plenty of water. Take victim immediately to hospital. Consult a physician.
<u>Ingestion:</u>	Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

5. Fire-Fighting Measures

<u>Suitable Extinguishing Media:</u>	Water spray, alcohol-resistant foam, dry chemical or CO2.
<u>Special Fire Fighting Procedures:</u>	Wear self-contained breathing apparatus for firefighting if necessary.
<u>Hazardous Combustion Products:</u>	This product will decompose under extreme temperatures forming oxides of carbon and Nitrogen.
<u>Unusual fire and explosion hazards:</u>	None known.

6. Accidental Release Measures

<u>Steps to be taken in case material is spilled:</u>	Wear respiratory protection. Avoid dust formation. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas. Avoid breathing dust.
<u>Environmental Disposal Information:</u>	Prevent further leakage or spillage if safe to do so. Do not let product enter drains.
<u>Waste Disposal:</u>	Pick up and arrange disposal without creating dust. Sweep up and shovel. Keep in suitable, closed containers for disposal.

7. Handling and Storage:

<u>Empty Containers:</u>	Not available.
<u>Precautions to be taken in handling:</u>	Avoid contact with skin and eyes. Avoid formation of dust and aerosols. Further processing of solid materials may result in the formation of combustible dusts. The potential for combustible dust formation should be taken into consideration before additional processing occurs. Provide appropriate exhaust ventilation at places where dust is formed.
<u>Storage:</u>	Keep container tightly closed in a dry and well-ventilated place. Storage class (TRGS 510): Non-combustible, acute toxic Cat.3 / toxic hazardous materials or hazardous materials causing chronic effects.

8. Exposure Controls / Personal Protection

<u>Exposure Controls:</u>	Not available.
<u>Respiratory Protection:</u>	Where risk assessment shows air-purifying respirators are appropriate use a full-face particle respirator type N99 (US) or type P2 (EN 143) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under

appropriate government standards such as NIOSH (US) or CEN (EU).

Ventilation:

Use only where sufficient ventilation exists to keep exposure levels of fumes and dust at a minimum.

Hand protection:

Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Eye Protection:

Face shield and safety glasses Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin and Body Protection:

Complete suit protecting against chemicals, The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Other Precautions:

Avoid contact with skin, eyes and clothing. Wash hands before breaks and immediately after handling the product.

Decontamination Facilities:

There should be a shower facility and eyewash in the building where this product is being stored and handled. Exercise good chemical handling practice.

9. Physical and Chemical Properties

Physical Form:

Solid

Appearance & Odor:

Yellow to brown crystal

Specific Gravity:

g/m³ @ 70 C: 1.0135

Melting Point:

68 - 72 °C (154 - 162 °F) - lit.

Softening Point, R&B:

Not available.

pH:

7.5 (5 g/L aq. solution)

Solubility in Water:

5 g/l

Flash Point, TAG CC F:

121 C (249 F)

Percent Volatiles (by weight):

Not available.

Viscosity cPs (25°C):

1.51 cst @90C

Evaporation Rate (Water ~ 1):

Not available.

Vapor Pressure (mm Hg):

Not available.

Vapor Density (Air ~ 1):

Not available.

<u>Boiling Point (°F) Initial:</u>	273 °C (523 °F)
<u>Auto ignition Temperature, °C:</u>	Not available.
<u>Flammable Limits, %(V):</u>	Not available.

10. Stability and Reactivity

<u>Stability:</u>	This product is stable under normal conditions.
<u>Incompatibility (Materials to Avoid):</u>	Material reacts with strong oxidizing agents.
<u>Conditions to Avoid:</u>	Keep away from extreme heat.
<u>Hazardous Polymerization:</u>	Hazardous polymerization will not occur.
<u>Hazardous Decomposition Products:</u>	Carbon monoxide, carbon dioxide and phosphorous oxides.

11. Toxicological Information

<u>OSHA Permissible Exposure Limit:</u>	Not available.
<u>ACGIH Threshold Limit Value:</u>	Not available.
<u>Acute toxicity:</u>	LD50 Oral - Rat - 100 mg/kg Remarks: Behavioral: Muscle weakness. Kidney, Ureter, Bladder Other changes in urine composition. Blood: Hemorrhage.
<u>Inhalation:</u>	No data available.
<u>Skin corrosion/irritation:</u>	Skin - Rat Result: No skin irritation (OECD Test Guideline 404)
<u>Serious eye damage/eye irritation:</u>	Eyes - Rabbit Result: Mild eye irritation
<u>Respiratory or skin sensitization:</u>	No data available.
<u>Germ cell mutagenicity:</u>	No data available.
<u>Reproductive toxicity:</u>	No data available.
<u>Specific target organ toxicity - single exposure:</u>	No data available.
<u>Specific target organ toxicity - repeated exposure:</u>	No data available.
<u>Aspiration hazard:</u>	No data available.

IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

ACGIH: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.

NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

12. Ecological Information

<u>Toxicity</u> :	No data available.
<u>Persistence and degradability</u> :	No data available.
<u>Bioaccumulative potential</u> :	No data available.
<u>Mobility in soil</u> :	No data available.
<u>Results of PBT and vPvB assessment</u> :	PBT/vPvB assessment not available as chemical safety assessment not required/not conducted.

13. Disposal Considerations

Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material. Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber. Dispose of as unused product.

14. Transport Information

<u>D.O.T. Shipping Name</u> :	UN number: 2811, Class: 6.1, Packing group: III, Proper shipping name: Toxic solids, organic, n.o.s. (2,2'-Bipyridyl), Reportable Quantity (RQ): Poison Inhalation Hazard: No
<u>Air - ICAO (International Civil Aviation Organization)</u> :	UN number: 2811 Class: 6.1 Packing group: III EMS-No: F-A, S-A, Proper shipping name: TOXIC SOLID, ORGANIC, N.O.S. (2,2'-Bipyridyl]
<u>Sea - IMDG (International Maritime Dangerous Goods)</u> :	UN number: 2811 Class: 6.1 Packing group: III, Proper shipping name: Toxic solid, organic, n.o.s. (2,2'-Bipyridyl)

15. Regulatory Information

All components of this material are on the TSCA Inventory.

All components of this material are on the Canadian DSL.

<u>SARA 302 Components:</u>	No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.
<u>SARA 313 Components:</u>	This material does not contain any chemical components with known CAS numbers that exceed the threshold (DeMinimis) reporting levels established by SARA Title III, Section 313.
<u>SARA 311/312 Hazards:</u>	Acute Health Hazard.
<u>Massachusetts Right To Know Components:</u>	No components are subject to the Massachusetts RTK Act.
<u>Pennsylvania Right To Know Components:</u>	2,2'-Bipyridyl CAS-No. 366-18-7
<u>New Jersey Right To Know Components:</u>	2,2'-Bipyridyl CAS-No. 366-18-7
<u>California Prop. 65 Components:</u>	This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

16. Other Information

The above information has been compiled from what we believe to be credible sources. To our knowledge the information is accurate and reliable, however, it is not guaranteed. Any recommendations issued by HB Chemical personnel or literature is derived from experience and by no means should be taken as fact or construed as a recommendation to violate of any law, regulation or patent. It is the users responsibility to determine the suitability of any HB supplied material in their application. The individual conditions of each customer are well outside of our control and we cannot be held liable for its functionality and use. Please contact our office should you need specific information beyond what is supplied above. As with all Chemical usage safety precautions beyond the stated are highly recommended.