



Diethyl(3-pyridyl)borane

Safety Data Sheet

According to the federal final rule of hazard communication revised on 2012 (HazCom 2012)

Date of compilation : December 08, 2015

Date of Issue : February 26, 2024

Revision Due Date : January, 2027

File Name : 0778Gj Ghs07 Div.03 sds Diethyl(3-pyridyl) borane

Revision Number : 07

Supersedes date : January 02, 2024

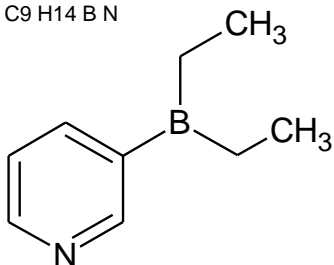
Supersedes version : 0778Gj Ghs06 Div.03 sds Diethyl(3-pyridyl) borane

SECTION 1: Identification

1.1. Identification

Product name : Diethyl (3-pyridyl) borane
CAS RN : 89878-14-8
EC No. : 627-082-6
Molecular formula : C₉H₁₄B N

Structural formula :



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

- Used as an intermediate of Abiraterone

1.3. Details of the supplier of the safety data sheet

Jubilant Ingrevia Limited

FACTORY & REGISTERED OFFICE: Jubilant Ingrevia Limited, Bhartiagram, Gajraula, District: Amroha, Uttar Pradesh-244223, India
T +91-5924-267437, +91-5924-267438

HEAD OFFICE: Jubilant Ingrevia Limited, Plot 1-A, Sector 16-A, Institutional Area, Noida, Uttar Pradesh, 201301 - India
T +91-120-4361000 - F +91-120-4234881 / 84 / 85 / 87 / 95 / 96 support@jubl.com - www.jubilantingrevia.com

1.4. Emergency telephone number

For Chemical Emergency ONLY (in the case of fire, leak, spill, exposure or accident)

Call Chemtrec: 1-800-424-9300 (US), 1-703-527-3887 (Outside U.S.)

Chemtrec (India) : 000-800-100-7141

For ALL other emergencies call Emergency Control Room Gajraula at 99970 22412

SECTION 2: Hazard(s) identification

2.1. Classification of the substance or mixture

GHS US CLASSIFICATION

- | | |
|---|------|
| • Skin irritation (Category 2) | H315 |
| • Eye irritation (Category 2A) | H319 |
| • Specific target organ toxicity - single exposure (Category 3) | H335 |

2.2. Label Elements

GHS-US labeling

Hazard Pictogram (GHS-US)



GHS 07

Signal Word: *Warning!*



Diethyl(3-pyridyl)borane

Safety Data Sheet

According to the federal final rule of hazard communication revised on 2012 (HazCom 2012)

Hazard Statement:

- H315 Causes skin irritation.
- H319 Causes serious eye irritation.
- H335 May cause respiratory irritation.

PRECAUTIONARY STATEMENTS:

- P264: Wash hands thoroughly after handling.
- P280: Wear protective gloves/protective clothing/eye protection/face protection.
- P261: Avoid breathing dust/fume/gas/mist/vapours/spray.
- P271: Use only outdoors or in a well-ventilated area.
- P321: Specific treatment (See on the label).
- P302+P352: IF ON SKIN: Wash with plenty of soap and water.
- P332+313: If skin irritation occurs: Get medical advice/attention.
- P362: Take off contaminated clothing and wash before reuse.
- 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+313: If eye irritation persists: Get medical advice/attention.
- P304+340: IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
- P312: Call a POISON CENTER or doctor/physician if you feel unwell.
- P403+P233: Store in a well-ventilated place. Keep container tightly closed.
- P405: Store locked up.
- P501: Dispose of contents/container to local/regional/national/international regulations.

2.3. Other hazards

Not applicable

SECTION 3: Composition/information on ingredients

Chemical	CAS #	EC No.	Purity
Diethyl(3-pyridyl)borane	89878-14-8	627-082-6	98 %

SECTION 4: First aid measures

4.1. Description of first aid measures

- First-aid measures general : Never give anything by mouth to an unconscious person. Do not induce vomiting. If you feel unwell, seek medical advice (show the label where possible).
- First-aid measures after inhalation : Allow breathing of fresh air. Allow the victim to rest. If you feel unwell, seek medical attention. In case of irregular breathing or respiratory arrest provide artificial respiration. Do not apply mouth-to-mouth resuscitation. Induce artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device.
- First-aid measures after skin contact : Remove affected clothing and wash all exposed skin area with mild soap and water, followed by warm water rinse. Immediately flush skin with plenty of water for at least 15 minutes. If skin irritation occurs: Get medical advice/attention.
- First-aid measures after eye contact : Rinse immediately with plenty of water. Remove contact lenses, if present and easy to do. Continue rinsing. Obtain medical attention if pain, blinking or redness persists.
- First-aid measures after ingestion : Rinse mouth. Do NOT induce vomiting. Obtain emergency medical attention.

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

- Symptoms/injuries : Not expected to present a significant hazard under anticipated conditions of normal use.
- Symptoms/injuries after inhalation : Inhalation may cause irritation, cough, shortness of breath.
- Symptoms/injuries after skin contact : May cause mild skin irritation.
- Symptoms/injuries after eye contact : Causes serious eye irritation.



Diethyl(3-pyridyl)borane

Safety Data Sheet

According to the federal final rule of hazard communication revised on 2012 (HazCom 2012)

Symptoms/injuries after ingestion : May cause nausea, vomiting and diarrhea.

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

- Treat symptomatically.

SECTION 5: FIRE-FIGHTING MEASURES

5.1. Extinguishing media

- *Appropriate extinguishing media:* Dry chemical powder, chemical foam, and alcohol resistant foam. Water may also be used. Water sprays can be effective in cooling down the fire-exposed containers and knocking down the vapors. Water jets may be used to flush spills away and dilute the same to non-flammable mixtures.

5.2. Special Protective Equipment and Precautions for Fire Fighter

- Take care as it may decompose upon combustion or in high temperatures to generate poisonous fume.
- If tank, rail car or tank truck is involved in a fire, ISOLATE for 800 meters (1/2 mile) in all directions; also, consider initial evacuation for 800 meters (1/2 mile) in all directions or as per locally valid procedures.
- Fire fighters must wear Self Contained Breathing Apparatus (SCBA) and full protective clothing. The chemical is harmful in contact with skin.
- Report any run-off of fire waters contaminated with this chemical as per local and federal procedures applicable.

5.3 Unusual fire and explosion hazard:

- Toxic vapors may be released on thermal decomposition including Nitrogen Oxides, Carbon Monoxide, Carbon dioxide and Boron Oxides.
- Vapors are heavier than air. May travel considerable distance from source and flashback.

SECTION 6: ACCIDENTAL RELEASE MEASURES

Minor Spills

- Clean up all spills immediately following relevant Standard Operating Procedures.
- Avoid breathing vapors and contact with skin and eyes.
- Shut off leak source if possible.
- Shut off all possible sources of ignition.
- Wear protective clothing, boots, impervious gloves and safety glasses.
- Wipe up.
- Decontaminate all equipment.

Major Spill

- Alert Emergency Responders and tell them location and nature of hazard.
- Shut off all possible sources of ignition and increase ventilation.
- Wear protective clothing, full boots, impervious gloves, safety glasses and Self Contained Breathing Apparatus (SCBA), as may be deemed appropriate.
- Clear area of personnel and move upwind.
- Stop leaks if possible.
- Prevent, by any means available, spillage from entering drains or water and watercourses.
- Collect recoverable product into labeled containers for recycling, recovery or disposal.
- Contain spill with sand, earth or vermiculite.
- Spread area with lime or absorbent material, and leave for at least 1 hour before washing.
- Clean up all tools and equipment.
- Inform authorities in event of contamination of any public sewers, drains or water bodies.

SECTION 7: HANDLING AND STORAGE

7.1. Precautions for safe handling

- Do not breathe vapor or mist.
- Wear protective gloves/clothing and eye/face protection.
- Wash thoroughly after handling.
- Ground and secure containers when dispensing or pouring product.
- Avoid contact with incompatible materials.
- When handling, DO NOT eat, drink or smoke.
- Launder contaminated clothing before re-use.
- If on skin or hair, IMMEDIATELY remove all contaminated clothing and rinse/shower with plenty of water.
- Use in a well-ventilated place/Use protective clothing commensurate with exposure levels.



Diethyl(3-pyridyl)borane

Safety Data Sheet

According to the federal final rule of hazard communication revised on 2012 (HazCom 2012)

7.2. Conditions for safe storage, including any incompatibilities

- Store at ambient temperature in a dry and well ventilated place.
- Store away from incompatible materials (Strong oxidizer).
- Keep securely closed when not in use.

SECTION 8: EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1. Control parameters

• Exposure Limits Values

Chemical Name	STEL (ppm)	NIOSH	ACGIH	OSHA
Diethyl (3-pyridyl) borane	None available	None available	None available	None available

- **Exposure Limits (International)**
 - Not available.
- **Derived No-Effect-Levels (DNEL) / Predicted No-effect-concentration (PNEC)**
 - DNEL and PNEC data not available.

8.2. Exposure controls

- **Appropriate Engineering Controls:**
 - Provide exhaust ventilation or other engineering controls to keep the relevant airborne concentrations below their respective occupational exposure limits. Local ventilation is usually preferred. Ensure that eyewash stations and safety showers are close to the workstation location.
- **Personal Protection:**
 - Protective clothing should be selected specifically for the working place, depending on concentration and quantity of the hazardous substances handled. The resistance of the protective clothing to chemicals should be ascertained with the respective supplier.
 - **Hands:** Rubber or neoprene gloves and additional protection including impervious boots, apron, or coveralls as needed in areas of unusual exposure to prevent skin contact.
 - **Eyes:** Safety goggles/ Chemical Safety glasses and Face shield.
 - **Clothing:** Boots and clothing to prevent contact.
 - **Respirator:** Follow the OSHA respirator regulations found in 29CFR 1910.134 or European Standard EN 149. Always use a NIOSH or European Standard EN 149 approved respirator when necessary.
For emergency situations, wear a positive pressure, pressure-demand, full face piece self-contained breathing apparatus (SCBA) or pressure- demand supplied air respirator with escape SCBA and a fully-encapsulating, chemical resistant suit. (EPA,1998).

General Hygiene and general comments:

- Wash hands and face after working with substance.
- Immediately change contaminated clothing.
- Apply skin protective barrier cream.

SECTION 9 : PHYSICAL AND CHEMICAL PROPERTIES

• Information on basic physical and chemical properties.

Sr.No.	Parameter	Typical value
1.	Appearance	White to off white solid
2.	Odor	No odor
3.	Odor Threshold	Not available
4.	pH	Basic
5.	Melting point/Freezing point	155 °C at 1013 hPa
6.	Boiling Point	NA

Diethyl(3-pyridyl)borane

Safety Data Sheet

According to the federal final rule of hazard communication revised on 2012 (HazCom 2012)

7.	Flash point	Not available
8.	Evaporation rate (n-BuAc=1)	Not available
9.	Flammability (Liquid)	Not available
10.	Upper/lower flammability or Explosive limits	Not available
11.	Log Pow	2.88, Temp: 25 °C
12.	Vapor Pressure	<1.3E-8 Pa (or <1.0E-10 mmHg) at 20°C (293K) and <2.1E-8 Pa (or <1.5E-10 mmHg) at 25°C (298K)
13.	Density	1.05 g/cm ³ at 20 °C
14.	Solubility in solvent	DCM, Ethylacetate, Tetrahydrofuran, Toluene, < 10 mg/L in water at 20°C at Ph
15.	pKa (@250C)	Value: 4.40±0.12 @ 25 °C
16.	Auto-ignition temperature	Not available
17.	Decomposition temperature	Not available
18.	Viscosity	Not available
19.	Explosive property	Not available
20.	Oxidizing property	Not available

SECTION 10: STABILITY AND REACTIVITY

- **Stability:** The product is stable under normal conditions.
- **Conditions to avoid:** Keep away from heat, sparks, open flame, high temperature and incompatible chemicals. Avoid creating dusts as an explosive dust air mixture can be created at high concentrations. If dusts are created, ensure no sources of ignition are present. Take precautionary measures to prevent electrostatic discharges. Product is not sensitive to mechanical shock or impact.
- **Incompatible materials:** Strong Oxidizing agents.
- **Hazardous decomposition products:** Thermal decomposition may produce toxic fumes of Carbon monoxide, Carbon dioxide, Nitrogen oxides and boron oxides.
- **Possibility of hazardous reactions:** Hazardous Polymerization: Not reported.

SECTION 11: TOXICOLOGICAL INFORMATION

11.1. Information on toxicological effects

- Acute toxicity**
 - LD50(Oral)Rat- >2000 mg/kg
- Skin corrosion/irritation**
 - Causes skin irritation.
- Serious eye damage/irritation**
 - Causes serious eye irritation.
- Respiratory or skin sensitization**
 - No data available.
- Germ cell Mutagenicity**
 - No data available.
- Carcinogenicity**
 - Not listed by NTP, IARC and OSHA.
 - Not present on the EU CMR list.
 - According to information presently available Diethyl (3-pyridyl) borane is not found to be carcinogenic.
- Reproductive toxicity**
 - This product is not considered to be a reproductive or developmental hazard. However, this material when tested in laboratory animals at maternally toxic doses only was found to cause developmental and/or reproductive toxicity.
- STOT-single exposure**
 - May cause respiratory irritation.



Diethyl(3-pyridyl)borane

Safety Data Sheet

According to the federal final rule of hazard communication revised on 2012 (HazCom 2012)

- i) **STOT- repeated exposure**
 - No data available.
- j) **Aspiration Hazards**
 - No data available.

SECTION 12: ECOLOGICAL INFORMATION

12.1. Toxicity

Ecotoxicity:

12.1 Toxicity

Short-term toxicity to fish
LC50 > 100 mg/L (96hrs)

Short-term toxicity to aquatic invertebrates
EC50 (Daphnia magna) >100 mg/L (48 hrs)

12.2 Persistence and degradability

Not readily biodegradable

12.3 Bioaccumulative potential

No data available

12.4 Mobility in soil

Log Koc >5.63

12.5 Results of PBT and vPvB assessment

No data available

12.6 Other adverse effects

No data available

SECTION 13: DISPOSAL CONSIDERATIONS

13.1. Waste treatment methods

- Burn in a chemical incinerator equipped with an afterburner and scrubber.
- Dispose of this material in accordance with standard practice for disposal of potentially hazardous materials as required by applicable federal, state or local laws. Note that disposal regulations may also apply to empty containers and equipment rinsates.

SECTION 14: Transport information

14.1 UN number

ADR/RID: --

IMDG: --

IATA: --

14.2 UN proper shipping name

ADR/RID : Not dangerous goods

IMDG : Not dangerous goods

IATA : Not dangerous goods

14.3 Transport hazard class(es)

ADR/RID: --

IMDG: --

IATA: --

14.4 Packaging group

ADR/RID: --

IMDG: --

IATA: --

14.5 Environmental hazards

ADR/RID: no

IMDG Marine Pollutant: no

IATA: no

Hazard Pictogram: --

14.6 Special precautions for user

no data available



Diethyl(3-pyridyl)borane

Safety Data Sheet

According to the federal final rule of hazard communication revised on 2012 (HazCom 2012)

SECTION 15: REGULATORY INFORMATION

European Union Information

Classification as per CLP Regulation 1272/2008:

- **Hazards Class and Category:** Skin irritation (Category 2); Eye irritation (Category 2A); Specific target organ toxicity - single exposure (Category 3)
- **Hazard Statements:** H315; H319; H335

Chemical Inventory Lists:	Status
TSCA:	Not Listed
EC Inventory	Listed, EC No.627-082-6
Canada(DSL/NDL):	Not Listed
China Catalog of Hazardous chemicals 2015	Not Listed
New Zealand Inventory of Chemicals (NZIoC)	Not Listed
Philippines Inventory of Chemicals and Chemical Substances (PICCS)	Not Listed
Vietnam National Chemical Inventory	Not Listed.
China: IECSC	Not Listed
Taiwan: Chemical Substance Inventory in Taiwan, China (TCSI)	Listed

US information

CERCLA (Comprehensive Environmental Response, Compensation, and Liability Act): Diethyl(3-pyridyl) borane not listed

SARA 302/304 : Diethyl(3-pyridyl)borane not listed

SARA 311/312 : See section 2 for more information

California Prop. 65: Diethyl(3-pyridyl) borane not listed

CAA (Clean Air Act): Diethyl(3-pyridyl) borane not listed

CWA (Clean Water Act): Diethyl(3-pyridyl) borane not listed

EU Information

Water hazard class (WGK): WGK 3 (Severe hazards to water)

Substance of Very High Concern (SVHC) according to the REACH Regulations (EC) No. 1907/2006: Diethyl(3-pyridyl) borane not listed

SECTION 16: OTHER INFORMATION

Compilation information of safety data sheet

Date of compilation : December 8, 2015
Chemical : Diethyl (3-pyridyl) borane
CAS # : 89878-14-8
File Name : 0778Gj Ghs07 Div.3 sds Diethyl (3-pyridyl) borane
Revision Number : 07
Date of Issue : February 26, 2024
Revision Due Date : January, 2027
Supersedes Date : January 02, 2024

(a) A key or legend to aberrations and acronyms used in the safety data sheet;

- PBT =Persistent Bio accumulative and Toxic.
- vPvB= Very Persistent and Very Bio accumulative.
- SCBA= Self Contained Breathing Apparatus.
- NIOSH REL= National Institute for Occupational Safety and Health Recommended Exposure Limit.
- OSHA PEL=Occupational Safety and Health Administration Permissible Exposure Limit.
- OELTWA= Occupational Exposure Limit Time Weighted Averages.
- IDLH= Immediately Dangerous to Life or Health.
- UEL= Upper Explosive Limit.
- LEL= Lower Explosive Limit.
- RTECS= Registry of Toxic Effects of Chemical Substances.
- NTP=National Toxicology Program
- IARC= International Agency for Research on Cancer.



Diethyl(3-pyridyl)borane Safety Data Sheet

According to the federal final rule of hazard communication revised on 2012 (HazCom 2012)

- EPA=Environmental Protection Agency.
- TSCA= Toxic Substances Control Act.
- CSR=Chemical Safety Report.
- BCF = Bio Concentration Factor.
- CLP = Classification, Labelling and Packaging.
- LD / LC = Lethal Doses / Lethal Concentration.
- GHS = Globally Harmonized System.
- ADR = Accord europeen relative au transport international de marchandises.
- IMDG-Code = International Maritime Code for Dangerous Goods.
- EmS = Emergency measures on Sea.
- ICAO = International Civil Aviation Organization.
- IATA/DGR= International Air Transport Association/Dangerous Goods Regulation.

(b) Key Literature reference and sources for data

Biographical reference and data sources

- CLP REG (regulation) (EC) no. 1272/2008, last modification by regulation (EC) no. 790/2009
- DIR 67/548/EWG, last modification by DIR 2009/2/EC
- REG (EC) no. 1907/2006, last modification by REG (EC) Nr. 453/2009
- Hazard Communication/HazCom 2012

Internet

- RTECS

SDS US (GHS HazCom 2012)

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.
