Safety Data Sheet

According to REG (EC) no.453/2010

Product Identification: Beta- picoline 0003D01 Div.02 sds Beta- picoline
Date of issue: 20th July, 2011

Date of Compilation : July 20th 2011

Date of Revision : June 14th, 2011

Revision Number : 05

Version Number : 0003D01 Div.02 sds Beta picoline

Supersedes date : June 14th, 2011

Supersedes version : 0003C04 Div.02 sds Beta picoline

Safety Data Sheet

According to REG (EC) no.453/2010

Product Identification: Beta- picoline 0003D01 Div.02 sds Beta- picoline
Date of issue: 20th July, 2011

SECTION 1.: IDENTIFICATION OF THE SUBSTANCE AND OF THE COMPANY

1.1 Product identification: Beta picoline; CAS RN 108-99-6; EC# 203-636-9

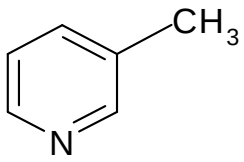
1.1.1. **Trade name:** Beta picoline
1.1.2. **Systematic Name:** 3-Methylpyridine, 3-Picoline, Pyridine, 3-methyl-

1.1.3. **Synonyms:** 3-Methylpyridine, 3-Picoline, Pyridine, 3-methyl-, Beta-Methyl pyridine, m-Methyl pyridine, m-Picoline.

1.1.4. **Other Languages:** **De:** 3-Methylpyridin
Es: 3-metilpiridina
Fr: 3-méthylpyridine

1.1.5 **Molecular Formula:** C_6H_7N

1.1.6 **Structural Formula:**



1.1.7. **Registration Status under REACH Regulation (EC) No. 1907/2006**

EC Name	Submission Number	Registration Number	Name of the Organization (OR)
3-methylpyridine	WM222026-32	01-2119493104-42-0001	Jubilant Pharmaceuticals NV

- **CLP Notification Number: 02-2119559169-27-0000**

1.2 Relevant Identified uses: Beta Picoline is used as a solvent in making Metronidazole benzoate and dyes. It is used as an intermediate in Pharmaceutical industry and in making pesticides. It is also used for making Niacin.

Based on the identified uses a Chemical safety Assessment with the relevant Risk Management measures have been specified as an Annex in the end of Safety Data Sheet.

Uses advised against: None

1.3 Company / supplier: ***FACTORY & REGISTERED OFFICE:***

Jubilant Life Sciences Ltd.
(Formerly, Jubilant Organosys Limited)
Bhartiagram, Gajraula
District: Jyotiba Phuley Nagar
Uttar Pradesh-244223 , India
PHONE NO: +91-5924-252353 unto 252360
Contact Department-Safety: Ext. 7424
FAX NO : 91-5924-252352

HEAD OFFICE:

Jubilant Life Sciences Ltd.
(Formerly, Jubilant Organosys Limited)
Plot 1-A, Sector 16-A,
Institutional Area, Noida,
Uttar Pradesh-201301 India.
PHONE NO: +91-120-2516601
FAX NO : +91-120-2516834
Email: response@jubl.com
Website: www.jubl.com

1.4 Emergency telephone: Medical and Transport Emergencies: +91-9997022412 (India)
Logistics emergencies: +91-120-4365441. (India).

SECTION 2: HAZARDS IDENTIFICATION

2.1 Classification of the substance

2.1.1. Classification according to regulation (EC) no. 1272/2008, annex VI

Flammable Liquid: Category 2	H225
Skin corrosion / irritant**:** Category 1C	H314
Acute toxicity Oral: Category 4	H302
Acute Toxicity Dermal: Category 3	H311
Acute Toxicity Inhalation: Category 3	H331
Serious eye damage/eye irritation: Category 1	H318
STOT-SE 3 (respiratory)	H335

2.1.2 Classification according to regulation (EC) no.67/548/EEC

F;R10 - Xn; R20/21/22 - Xi; R36/38

2.2 Labeling elements according to regulation (EC) 1272/2008

Pictograms:

GHS02–flammable

GHS05-Corrosive

GHS06-Toxic

Signal word: Danger!

2.3 Other hazards : ****EU H071:*** *Corrosive to the respiratory tract.*

Hazard and precautionary statements

Hazard Statements

- H225: Highly flammable liquid and vapour.
- H302: Harmful if swallowed.
- H311: Toxic in contact with skin.
- H314: Causes severe skin burns and eye damage.
- H318: Causes serious eye damage.
- H331: Toxic if inhaled.
- H335: May cause respiratory irritation.

Precautionary Statements

Prevention

- P210: Keep away from heat/sparks/open flames/hot surfaces – No smoking.
- P233: Keep container tightly closed.
- P240: Ground/bond container and receiving equipment.
- P241: Use explosion-proof electrical/ventilating/light/…/equipment.
- P243: Take precautionary measures against static discharge.
- P260: Do not breathe dust/fume/gas/mist/vapours/spray.
- P261: Avoid breathing dust/fume/gas/mist/vapours/spray.
- P264: Wash … thoroughly after handling.
- P271: Use only outdoors or in a well-ventilated area.
- P280: Wear protective gloves/protective clothing/eye protection/face protection.

Response

- P301+330+331: IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
- P303+361+353: IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.
- P304+340: IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
- P305+351+338: IF IN EYES: Rinse continuously with water for several minutes. Remove contact lenses if present and easy to do – continue rinsing.
- P370+378: In case of fire, use ... for extinction ... appropriate media specified by the manufacturer/supplier or the competent authority - if water increases risk.

Storage

- P403+235: Store in a well ventilated place. Keep cool

Disposal

- P501: Dispose of the container as per local norms and regulations.

*EU Additional Statement.

2.3 Other Hazards

- Substance is not classified as PBT nor as vPvB. For further details see section 12.

SECTION 3: COMPOSITION / INFORMATION ON INGERDIENTS

Sr. No.	Chemical	CAS #	EC#	Purity	Classification according to Reg (EC) No. 1272/2008		
					Hazard classes and categories	**Pictograms signal word**	**Hazard statements**
1	Beta-picoline	108-99-6	203-636-9	~99%	**Flammable Liquid:** Cat 2 **Skin corrosion / irritant:** Cat1C **Acute toxicity Oral:** Cat 4 **Acute Toxicity Dermal:** Cat 3 **Acute Toxicity Inhalation:** Cat3; **Serious eye damage/ irritation:** Cat 1; **Corrosive to the Respiratory Tract,** STOT-SE 3 (respiratory): Category 3	GHS 02, GHS 05, GHS 06	H225 H314 H302 H311 H331 H318

Classification and labeling acc. to dir. 67/548/EEC and dir. 1999/45/EC

Classification	Symbol	Risk Phrases
F Flammable Xn Harmful Xi Irritant	 	R10 ; R20/21/22; R36/38

SECTION 4: FIRST AID MEASURES

4.1.1 Route of exposure: Inhalation, skin, eye and ingestion

4.1.2 Advice

- IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
- IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.
- IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
- IF IN EYES: Rinse continuously with water for several minutes. Remove contact lenses if present and easy to do – continue rinsing.
- In case of fire, use ... for extinction ... appropriate media specified by the manufacturer/supplier or the competent authority - if water increases risk.

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

- ***Acute effects:***
  High concentrations are extremely destructive to tissues of the mucous membranes and upper respiratory tract, eyes and skin. Symptoms of exposure may include burning sensation, coughing, wheezing, laryngitis, shortness of breath, headache, nausea and vomiting. Exposure can cause gastrointestinal disturbance.
- ***Chronic effects:***
  Damage to the liver and kidneys**.**

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

- **Eyes**: Symptoms: Lachrymator, redness, severe burns.
  If in eyes rinse cautiously with water for at least 15 minutes. Remove contact lenses if easy to do so. Continue rinsing. Seek immediate medical attention.

- **Skin:** Corrosive. Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower. Wash contaminated clothing before reuse.
- **Inhalation**: Symptoms: Corrosive. Cough. Laboured breathing. Shortness of breath. Sore throat. Symptoms may be delayed. The symptoms of lung oedema often do not become manifest until a few hours have passed and they are aggravated by physical effort. Rest and medical observation are therefore essential. Remove to fresh air and keep at rest in a position comfortable for breathing. Call a physician if you feel unwell.
- **Ingestion**: Symptoms: Corrosive. Abdominal pain. Sore throat. Collapse. If swallowed call a poison center if you feel unwell. Rinse mouth. Do NOT induce vomiting by use of emetics. Seek prompt/immediate medical attention.

SECTION 5: FIRE-FIGHTING MEASURES

5.1. Extinguishing media.

- Dry chemical powder, carbon dioxide, 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 hazards arising from the substance or mixture.

- Vapor may flow long distance to distant ignition sources and flash back. Forms explosive mixtures in air. Emits toxic fumes under fire conditions. Toxic vapors may be released upon thermal decomposition (cyanides, nitrogen oxides, carbon monoxide).

- Consider isolating the fire when it involves the material and permitting it to burn itself out. Do not allow water to enter container, because of exothermic reaction.
- Flashback along vapor trail may occur. Closed container exposed to heat may explode. Irritating vapors and toxic fumes of carbon monoxide may be released in fore conditions.
- Consider isolating the fire when it involves the material and permitting it to burn itself out. Move all personnel out of the fire area. Move away in event of any explosion. Keep at safe distance.

5.3. Advice for firefighters.

- Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes. Do not breathe vapors.
- Withdraw immediately in case of rising sound from venting safety devices or discoloration of tank.
- Always stay away from tanks engulfed in fire.

- For massive fire, use unmanned hose holders or monitor nozzles; if this is impossible, withdraw from area and let fire burn.
- 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.
- 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.

SECTION 6 : ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures.

6.1.1 For non-emergency personnel

- Wear protective clothing, full boots, impervious gloves, safety glasses and Self Contained Breathing Apparatus (SCBA), as may be deemed appropriate.
- Avoid breathing vapors and contact with skin and eyes.
- Shut off leak source if possible.
- Shut off all possible sources of ignition.
- Wipe up.
- Decontaminate all equipment.
- Use non-sparking tools.

6.1.2 For emergency personnel

- Wear protective clothing, full boots, impervious gloves, safety glasses and Self Contained Breathing Apparatus (SCBA), as may be deemed appropriate.
- Alert Emergency Responders and tell them location and nature of hazard.
- Shut off all possible sources of ignition and increase ventilation.
- Stop leaks if possible.
- Clean up all spills immediately following relevant Standard Operating Procedures.
- Avoid breathing vapors and contact with skin and eyes.
- Use non-sparking tools.

6.2. Environmental precautions.

- Clean up all spills immediately following relevant Standard Operating Procedures.

- Inform authorities in event of contamination of any public sewers, drains or water bodies.
- Wipe up.
- 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.

6.3. Methods and material for containment and cleaning up.

6.3.1: Containment of the spill.

(a) Bunding, covering of drains.

- 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.
- 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.
- Clean up all tools and equipment.
- Inform authorities in event of contamination of any public sewers, drains or water bodies.

(b) Capping procedure.

- 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.
- Wipe up.
- Decontaminate all equipment.
- Use non-sparking tools.

6.3.2 Cleanup procedure

- Spread area with lime or absorbent material, and leave for at least 1 hour before washing.
- Decontaminate all equipment

6.4. Reference to other sections.

- Referred to section 8 and 13.

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.

7.2. Conditions for safe storage, including any incompatibilities

- Store in a cool, well ventilated place.
- Store in a flame proof area.
- Store away from incompatible materials.
- Keep only in original container.
- Keep securely closed when not in use.
- Store in flame-proof area.

7.3. Specific end use(s)

Beta Picoline is used as a solvent in making Metronidazole benzoate and dyes. It is used as an intermediate in Pharmaceutical industry and in making pesticides. It is also used for making Niacin.

SECTION 8 : EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1. Control parameters

8.1.1Exposure Limits Values

Chemical name	ACGIH TLV	OSHA PEL
Beta-picoline	Not established	Not established

8.2 Exposure Controls

The hazard associated with this property is the potential for fire or explosion due to vapor concentration. The most likely occurrence would result from:

- Spills or releases during storage or transfer
- Flammable vapor concentrations present during maintenance operations
- Exposure to open flame /sparks / excessive heat / static electricity

The severity of the impact of the hazard above is suggested to the employee injury ranging from minor to severe burns or inhalation of products of combustion, which may include cyanides, nitrogen oxides and carbon monoxide. Significant damage to operating equipment from explosion or fire may cause release of material.

Beta Picoline has been registered both as a Phase in as well as Transported Isolated Intermediate (TII). The major application goes into TII. The Safety Data Sheet is consistent with the specific conditions relied on to justify the REACH registration in accordance with Article 18 of Regulation (EC) 1907/2006.

a) The substance is rigorously contained by technical means during its whole life cycle including use, purification, cleaning, maintenance of equipment, sampling, analysis, loading and unloading of equipment vessels, waste disposal or purification and storage
b) Procedural and control technologies are used that minimize emission and any resulting exposure
c) Only properly trained and authorized personnel handle this susbstance.
d) In the case of cleaning and maintenance works, special procedures such as purging and washing are applied before the system is opened and entered.

e) In cases of accident and where waste is generated, procedural and/or control technologies are used to minimize emissions and resulting exposure during purification or cleaning and maintenance procedures, and
f) Substance handling procedures are well documented and strictly supervised the side operator

Acute Toxicity (Oral/Dermal/Inhalation)

- High concentrations are extremely destructive to tissues of the mucous membranes and upper respiratory tract, eyes and skin. Symptoms of exposure may include burning sensation, coughing, wheezing, laryngitis, shortness of breath, headache, nausea and vomiting. Exposure can cause gastrointestinal disturbance.
- **Beta Picoline is harmful if swallowed, in contact with skin and if inhaled. It causes irritation to skin, eyes and respiratory system**

Irritation/Corrosivity(Skin/eyes/Resporatorys tract):

- Although in modern skin or eye animal studies have been conducted, the weight of evidence indicates that the liquid material is likely to be a severe eye irritant, whilst the vapour irritant to the eyes and respiratory tract. In humans severe irritation of the eyes and respiratory tract resulted from exposure to the vapour/aerosol and the liquid is corrosive to skin.

Repeated dose Toxicity, sub acute/sub chronic/chronic(Oral/Dermal/Inhalation):

- **Chronic Exposure**
  No chronic exposure data were located.

8.2.1 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.

8.2.2. 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**: Wear appropriate protective gloves to prevent skin exposure.
- **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.

SECTION 9 : PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties.

Sr.No.	Parameter	Typical value
a)	Appearance	Colorless to yellow tinted liquid
b)	Odor	Sweetish, Characteristic
c)	Odor Threshold	Not available
d)	pH	10 (in water solution, 100 g/L @ 20°C)
e)	Melting point/Freezing point	(-) 183 °C
f)	Initial Boiling point and boiling range	143 °C
g)	Flash point	38^0C closed cup (100.4^0F)
h)	Evaporation rate (n-BuAc=1)	Not available
i)	Flammability (Solid, gas)	Flammable Liquid
j)	Upper/lower flammability or Explosive limits	1.3%-8.7%
k)	Vapor pressure	1.3 kPa
l)	Vapor density (air=1)	2.7

m	Relative density	Not available
n	Solubility	Miscible, 1.00E+06 mg/L Temp: 25 °C
o	Log Pow, partition coefficient (Octonol /water)	1.2
p	Auto-ignition temperature	538°C
q	Decomposition temperature	Not available
r	Viscosity	Not available
s	Explosive property	No
t	Oxidizing property	No

9.2. Other information.

- **pKa (@25^{0}C):** 5.63; **Refractive Index:** 1.506 .; **Molecular Weight:** 93.13; **Corrosive material:** Yes.

SECTION 10: STABILITY AND REACTIVITY

10.1. Reactivity

- BETA-PICOLINE may react with oxidizing materials (NTP, 1992). Neutralizes acids in exothermic reactions to form salts plus water. May be incompatible with isocyanates, halogenated organics, peroxides, phenols (acidic), epoxides, anhydrides, and acid halides ,acids and acid chlorides, Oxidizing materials like hydrogen peroxide and sulphuric acid and Chloroformates. Flammable gaseous hydrogen may be generated in combination with strong reducing agents, such as hydrides.

10.2. Chemical stability

- Stable under normal temperature and pressure. Heat will contribute to instability.

10.3. Possibility of hazardous reactions

- Thermal decomposition may produce Cyanide, nitrogen oxides and carbon monoxide.

10.4. Conditions to avoid

- Hygroscopic**.** Keep away from heat, sparks, flame, high temperature and incompatible chemicals.

10.5. Incompatible materials

- Acids and acid chlorides, Oxidizing materials like hydrogen peroxide and sulphuric acid and Chloroformates.

10.6. Hazardous decomposition products

- Thermal decomposition may produce Cyanide, nitrogen oxides and carbon monoxide.

10.7. Hazardous Polymerization: Not reported.

SECTION 11: TOXICOLOGICAL INFORMATION

11.1. INFORMATION ON TOXICOLOGICAL EFFECTS

a) ACUTE TOXICITY

- **RTECS#**: TJ5000000

No.	Parameter	Data
1	**Acute Oral LD50**	= 400 mg/kg
2	**Acute Inhalation LC50:**	= < 3300 ppm
3	**Acute Dermal LD50:(rodent)**	= 1000mg/kg
4	**Acute Inhalation Rat Lc_{10}**	= 11820 Mg/M3/5h.
5	**Intraperitoneal Rat Ld50**	= 150mg/Kg
6	**Intraperitoneal Mouse Ld50**	596mg/Kg

b) SKIN CORROSION/ IRRITATION

- It causes burns and is irritating to skin.

c) SERIOUS EYE DAMAGE/IRRITATION

- It is irritating to eyes.
- **Parameter:** Irritation/corrosion (Epidemiological data)
- **Data :** Beta-picoline is a strong irritant ...on contact with eyes, usually with delayed action; contact is followed by lacrimation, photophobia, conjunctivitis and corneal edema. Inhalation can cause nasopharyngeal and upper respiratory tract irritation, with burning sensations, cough and dyspnea; prolonged exposure may lead to pulmonary edema.

d) RESPIRATORY OR SKIN SENSITIZATION;

- Data is not available.
- **Skin Sensitization**
- **Parameter** **:** Skin sensitization.
- **Data** **:** Ambiguous results. Dermal sensitization been reported in some cases.

e) GERM CELL MUTAGENICITY

- **Parameter** : Mutagenicity
- **Data** **:** Genotoxic activity was absent (i.e., DNA lesions were not induced and mutagenic activity was not induced) when tested using the following tests: DNA single-strand breaks measurement in V79 cells, HGPRT gene mutation assay in V79 cells, and Ames Salmonella/microsome test.

f) CARCINOGENICITY

- Not listed by NTP, IARC and OSHA.
- Not present on the EU CMR list.
- According to information presently available Beta Picoline is not found to be carcinogenic.

g) REPRODUCTIVE TOXICITY

- No information available.

h) STOT-SINGLE EXPOSURE

- No information available.

i) STOT- REPEATED EXPOSURE

- No information available.

j) ASPIRATION HAZARD.

- No information available.

11.2 Other Information

ACUTE EFFECTS

11.1.1 Beta Picoline is harmful if swallowed, in contact with skin and if inhaled. It causes irritation to skin, eyes and respiratory system**.**

11.1.2 CHRONIC EFFECTS:

- Damage to the liver and kidneys
- **Target Organs**: Eyes, skin, respiratory system, CNS, liver and Kidney.

SECTION 12: ECOLOGICAL INFORMATION

12.1. Toxicity

12.1.1 Ecotoxicity:

- OECD algae growth inhibition test: EC50 (Selenastrum capricornutum) = 320 mg/L.
- OECD acute immobilization and reproduction test for Daphnia: EC50 (24 hours): between 180 mg/L and 320 mg/L; EC50 (48 hours) = 320 mg/L; NOEC = 180 mg/L.
- OECD fish testing: LC50 (96 hrs) between 560 mg/L and 1000 mg/L; NOEC (behavior) = 320 mg/L; NOEC (mortality) = 560 mg/L.

12.1.2 .Chronic Toxicity to Fish:

- No information is available.

12.2. Persistence and degradability

- Does not biodegrade readily based on very low BCF value.

12.3. Bioaccumulative potential

- BCF = Not available
- Log Pow = -1.2
- Does not biodegrade readily based on very low BCF value.

12.4. Mobility in soil

- Koc=53.46. Moderate mobility in soil.
- Henry's Law constant: 7.73E-06 atm-m3/mole. Moderately volatile from aqueous bodies, despite high water solubility.
- Log Pow=1.2. Low potential to bioaccumulate.

12.5. Results of PBT and vPvB assessment

- The substance does not meet the criteria for PBT or vPvB in accordance with Annex XIII.

12.6. Other adverse effects.

- **Environment Fate:**

- Fully biodegradable within 28-day test period using OECD guidelines for CO2 evolution test.

SECTION 13: DISPOSAL CONSIDERATIONS

13.1. Waste treatment methods

- Burn in a chemical incinerator equipped with an afterburner and scrubber.
- Exert extra care in igniting, as this material is highly flammable.
- 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

- This substance is considered to be hazardous for transport by Air/Rail/Road and Sea and thus regulated by IMO/ IMDG/ IATA/ ICAO.
-

Mode of Transport	Agency
Land transport	ADR/RID
Maritime Transport	IMDG
Air Transport	IATA

14.1. UN number

- UN 2313

14.2. UN proper shipping name

- Picolines (3-Picolines)

14.3. Transport hazard class(es)

- Flammable liquid class 3
- Hazard Label

14.4. Packing group

- III

14.5. Environmental hazards

- It Does not biodegrade readily based on very low BCF value and is fully biodegradable within 28-day test period using OECD guidelines for CO2 evolution test. It is moderately volatile from aqueous bodies, despite high water solubility and is low potential to bioaccumulate.

Based on the environmental modeling, this material has a moderate potential to get absorbed in the organic matter of soil and is volatile from water bodies. Since this is an estimated result it is recommended that the material should be disposed into the environment. The material should never be disposed into the sewage.

14.6. Special precautions for user

- Keep away from heat/sparks/open flames/hot surfaces – No smoking.
- Keep container tightly closed.
- Ground/bond container and receiving equipment.
- Use explosion-proof electrical/ventilating/light/…/equipment.
- Take precautionary measures against static discharge.
- Do not breathe dust/fume/gas/mist/vapours/spray.
- Avoid breathing dust/fume/gas/mist/vapours/spray.
- Wash … thoroughly after handling.
- Use only outdoors or in a well-ventilated area.
- Wear protective gloves/protective clothing/eye protection/face protection.

SECTION 15: REGULATORY INFORMATION

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

European/International Regulations.

Classification (as per Regulation (EC) No 1272/2008):

- **Hazards Class and Category**: Flam. Liq. Cat.2; Acute Tox.Oral Cat.4; Acute Tox Dermal Cat.3, Eye Dam.Cat 1;Acute Tox. Inhalation Cat.3; STOT SE Cat3;Skin Corr 1C
- **Hazard Statements:** H225; H302; H311; H318;H331; H335;H314

Classification as per directive 67/548/EEC

- F; R10 - Xn; R20/21/22 - Xi; R36/38

US information

- EPA TSCA section 8 (b) chemical inventories.
- None of the chemicals in this product are listed under TSCA section 12b.

- None of the chemicals in this product have an RQ under SARA Section 302(RQ)
- None of the chemicals in this product have an TPQ under SARA Section 302(TPQ)
- None of the chemicals in this product contain any class1 & class2 ozone depletors, neither contain any hazardous air pollutants under 'Clean Air Act'
- None of the chemicals in this product are listed as Hazardous substances or priority pollutants or Toxic substances list under 'Clean Water Act'
- This product is not subject to SARA section 313 reporting requirements

- **Canada**: Present on the DSL
- **Japan**: Yes
- **Korea**: No
- **Australia**: Yes
- **China**: Yes
- **Philippines**: Yes

SECTION 16: OTHER INFORMATION

Revision Note:

This Extended SDS (e-SDS) is an updated version of Safety Data Sheet "0003C04 Div.02 sds Beta- picoline". The following changes were incorporated in the current version.

- The format has been changed according to REG(EC) no.453/2010 with more details on Toxicological properties and Identified Uses.Chemical Safety Assessment has been attached in the end based on the identified uses of the product.

(a) Compilation information of safety data sheet

SDS data
Chemical: Beta-picoline
CAS #: 108-99-6

File Name: 0003C05 Div.02 sds Beta- picoline
Date of Preparation of SDS : June 14, 2011
Revision Number: 05
Revision Due Date: May, 2013

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

- **PBT =P**ersistent **B**ioaccumulative and **T**oxic
- **vPvB**= **V**ery **P**ersistent and **V**ery **B**ioaccumulative
- **SCBA**= **S**elf **C**ontained **B**reathing **A**pparatus
- **NIOSH REL**= **N**ational **I**nstitute for **O**ccupational **S**afety and **H**ealth **R**ecommended **E**xposure **L**imit
- **OSHA PEL**=**O**ccupational **S**afety and **H**ealth **A**dminstration **P**ermissible **E**xposure **L**imit
- **OELTWA**= **O**ccupational **E**xposure **L**imit **T**ime Weighted **A**verages
- **IDLH**= **I**mmediately **D**angerous to **L**ife or **H**ealth
- **UEL**= **U**pper **E**xplosive **L**imit
- **LEL**= **L**ower **E**xplosive **L**imit
- **CMR: C**arcinogenic, **M**utagenic or toxic to **R**eproduction
- **ESIS: E**uropean chemical **S**ubstance **I**nformation **S**ystem
- **RTECS**= **R**egistry of **T**oxic **E**ffects of **C**hemical **S**ubstances
- **NTP**=**N**ational **T**oxicology **P**rogramm
- **NOEC**=**N**o **O**bserved **E**ffect **C**oncentration
- **REACH**= **R**egistration, **E**valuation, **A**uthorisation and Restriction of **Ch**emical substances
- **IARC**= **I**nternational **A**gency for **R**esearch on **C**ancer
- **EPA**=**E**nvironmental **P**rotection **A**gency
- **EPA TSCA**= **E**nvironmental **P**rotection **A**gency **T**oxic **S**ubstances **C**ontrol **A**ct
- **CERCLA**= **C**omprehensive **E**nvironmental **R**esponse, **C**ompensation, and **L**iability **A**ct
- **OECD= O**rganization for **E**conomic **C**o-operation **& D**evelopment
- **SARA**= **S**uperfund **A**mendments and **R**eauthorization **A**ct
- **NFPA**= **N**ational **F**ire **P**rotection **A**ssociation
- **TEC**=**T**ransport **E**mergency **C**ard
- **WHIMS**= **W**orkplace **H**azardous **M**aterials **I**nformation **S**ystem
- **DSL/NDSL**= **D**omestic/**N**on-**D**omestic **S**ubstances **L**ist
- **CSR**=**C**hemical **S**afety **R**eport
- **BCF** = **B**io **C**oncentration **F**actor
- **DNEL** = **D**erived **N**o **E**ffect **L**evel
- **PNEC** = **P**redicted **N**o **E**ffect **C**oncentration
- **TLV** = **T**hreshhold **L**imit **V**alue

- **ACGIH** = **A**merican **C**onference of **G**overnmental **I**ndustrial **H**ygienists
- **EN** = **E**uropäische **N**orm
- **EC** = **E**uropea **C**ommunity
- **REACH** = **R**egistration, **E**valuation and **A**uthorisation of **C**hemicals
- **CLP** = **C**lassification, **L**abelling and **P**ackaging
- **LD / LC** = **L**etale **D**osis / **L**ethal **C**oncentration
- **GHS** = **G**lobally **H**armonised **S**ystem
- **ADR** = **A**ccord europeen relative au transport international de marchandises
- **RID** = **R**eglement concernant le transport **I**nternational ferroviaire de marchandises **D**angereuses
- **IMDG**-Code = **I**nternational **M**aritime Code for **D**angerous **G**oods
- **EmS** = **E**mergency **m**easures on **S**ea
- **ICAO** = **I**nternational **C**ivil **A**viation **O**rganization
- **IATA/DGR**= **I**nternational **A**ir **T**ransport **A**ssociation/**D**angerous **G**oods **R**egulations

(c) 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

Internet

- RTECS
- ESIS

(d) List of Risk Phrases, Hazard statements, safety Phrases and/or precautionary statements.

Risk Phrases	R10; R20/21/22; R36/38 • R10 : Flammable. • R20/21/22: Harmful by inhalation, in contact with skin and if swallowed. • R36/38: Irritating to eyes and skin.
Hazards	H225; H302;H311,H314,H318,H331,H335

Statements	• H225: Highly flammable liquid and vapour. • H302: Harmful if swallowed. • H311: Toxic in contact with skin. • H314: Causes severe skin burns and eye damage. • H318: Causes serious eye damage. • H331: Toxic if inhaled. • H335: May cause respiratory irritation
Safety Phrases	S 26;S27;S28; S45 • S 26: In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. • S 27: Take off immediately all contaminated clothing. • S28: After contact with skin, wash immediately with plenty of soap-suds. • S45 :In case of accident or if you feel unwell, seek medical advice immediately (show the label whenever possible.).
Precautionary Statements	P210;P233;P240;P241;P243;P260;P261;P264;271;P280;P301+330+331; P303+361+353;P304+340;P305+351+338;P370+378;P403+235;P501

Company's Declaration:

Information contained in this SDS is believed to be correct but no representation, guarantee or warranties of any kind are made as to its accuracy, suitability for a particular application or results to be obtained from them. This SDS shall be used as a guide only. Jubilant Life Sciences Limited makes no warranties expressed or implied of the adequacy of this document for any particular purpose.

ANNEX

S.No.	Main Use Category	Sub Use category	Sector of Use (SU)	PROC	ERC	Application type
1	Solvent	Metronidazole Benzoate	SU 3 Industrial uses: Uses of substances as such or in preparations at industrial sites	PROC8b - Transfer of substance or preparation (charg-ing/discharging) from/to vessels/large containers at dedicated facilities; PROC3 - Use in closed batch process (synthesis or formulation)	ERC1 - Manufacture of substances	Phase in
		Dyes	SU 3 Industrial uses: Uses of substances as such or in preparations* at industrial sites	PROC8b - Transfer of substance or preparation (charg-ing/discharging) from/to vessels/large containers at dedicated facilities; PROC3 - Use in closed batch process (synthesis or formulation)	ERC1 - Manufacture of substances	Phase in
2	Intermediate	Pharma	SU 3 Industrial uses: Uses of substances as such or in preparations* at industrial	PROC8b - Transfer of substance or preparation (charg-ing/discharging) from/to vessels/large	ERC6a - Industrial use resulting in manufacture of another substance (use of	TII

			sites	containers at dedicated facilities; PROC3 - Use in closed batch process (synthesis or formulation)	intermediates)	
		Intermediates	SU 3 Industrial uses: Uses of substances as such or in preparations* at industrial sites	PROC8b - Transfer of substance or preparation (charg-ing/discharging) from/to vessels/large containers at dedicated facilities; PROC3 - Use in closed batch process (synthesis or formulation)	ERC6a - Industrial use resulting in manufacture of another substance (use of intermediates)	TII
		Pesticides	SU 3 Industrial uses: Uses of substances as such or in preparations at industrial sites	PROC8b - Transfer of substance or preparation (charg-ing/discharging) from/to vessels/large containers at dedicated facilities; PROC3 - Use in closed batch process (synthesis or formulation)	ERC6a - Industrial use resulting in manufacture of another substance (use of intermediates)	TII
3	Intermediate	Niacin	SU 3 Industrial uses: Uses of substances as such or in	PROC8b - Transfer of substance or preparation (charg-ing/discharging)	ERC6a - Industrial use resulting in manufacture of another	TII

			preparations at industrial sites	from/to vessels/large containers at dedicated facilities; PROC3 - Use in closed batch process (synthesis or formulation)	substance (use of intermediates)	

Risk Management Measures

Risk Management Measures are defined below.

- Proper labeling of the substance in storage and lines used for transfer
- Use of appropriate equipment:
  - Bonded and grounded tanks, lines and vessels
  - Applicable storage tank controls , i.e. pressure and temperature gauging, pressure relief venting with routing to safe areas
  - Applicable processing vessel controls, i.e rupture discs with routing to overfill vessels of adequate capacity
  - Ventilation for storage areas
  - Inside storage in rooms compliant for flammable materials
  - Processing in areas of good ventilation, with local exhaust or in closed systems
  - Transfers in closed, dedicated lines
  - Electrical equipment with explosion proof rating
  - Impervious secondary containment with volume greater than the largest container / vessel in the area
  - Other equipment, including fire control systems, consistent with and required for the storage and use of flammable materials
  - Fire extinquishing media: Water fog, Alcohol foam, Carbon Dioxide, Dry chemical
- Proper operations and storage conditions
  - Controls to maintain the substance at appropriate temperature and pressure
  - Isolation from uncontrolled heat sources, such as steam lines

- Organization Controls
  - Written operating procedures for storage, transfer, substance use and emergency
  - Keep away from heat/sparks/open flames/hot surfaces
  - Ground / bond container and receiving equipment
  - Take precautionary measures against static discharge
  - Store in well ventialted area, keep cool
  - Keep containers tightly closed
  - No smoking
  - Monitor of substance vapor concentration prior to activities such as equipment maintenance and repair
  - Implementation of formal hot work procedures
  - Training of employees on chemical process safety and emergency response
  - Access to SDS
  - Use of non sparking tools
  - Avoid contact with strong acids and oxidizing agents

----------End of SDS----------