SAFETY DATA SHEET

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

1.1 Product identifiers
Product name: 2-Vinylpyridine
Product Number: 132292
Brand: Aldrich
CAS-No.: 100-69-6

1.2 Relevant identified uses of the substance or mixture and uses advised against
Identified uses: Laboratory chemicals, Synthesis of substances
Uses advised against:

1.3 Details of the supplier of the safety data sheet
Company: Sigma-Aldrich Inc.
3050 SPRUCE ST
ST. LOUIS MO 63103
UNITED STATES
Telephone: +1 314 771-5765
Fax: +1 800 325-5052

1.4 Emergency telephone
Emergency Phone #: 800-424-9300 CHEMTREC (USA) +1-703-527-3887 CHEMTREC (International) 24 Hours/day; 7 Days/week

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture
GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)
- Flammable liquids (Category 3), H226
- Acute toxicity, Oral (Category 4), H302
- Acute toxicity, Dermal (Category 3), H311
- Skin corrosion (Category 1B), H314
- Serious eye damage (Category 1), H318
- Skin sensitization (Category 1), H317
- Short-term (acute) aquatic hazard (Category 2), H401
- Long-term (chronic) aquatic hazard (Category 2), H411

For the full text of the H-Statements mentioned in this Section, see Section 16.

2.2 GHS Label elements, including precautionary statements
2.3 Hazards not otherwise classified (HNOC) or not covered by GHS
Corrosive to the respiratory tract.
Lachrymator.
SECTION 3: Composition/information on ingredients

3.1 Substances

<table>
<thead>
<tr>
<th>Component</th>
<th>Classification</th>
<th>Concentration</th>
</tr>
</thead>
<tbody>
<tr>
<td>2-Vinylpyridine</td>
<td>Flam. Liq. 3; Acute Tox. 4; Acute Tox. 3; Skin Corr. 1B; Eye Dam. 1; Skin Sens. 1; Aquatic Acute 2; Aquatic Chronic 2; H226, H302, H311, H314, H318, H317, H401, H411</td>
<td>&lt;= 100 %</td>
</tr>
<tr>
<td>4-tert-butylpyrocatechol</td>
<td>Acute Tox. 4; Skin Corr. 1B; Eye Dam. 1; Skin Sens. 1; Aquatic Acute 1; Aquatic Chronic 2; H302, H312, H314, H318, H317, H400, H411 M-Factor - Aquatic Acute: 1</td>
<td>&gt;= 0.1 - &lt; 1 %</td>
</tr>
</tbody>
</table>

For the full text of the H-Statements mentioned in this Section, see Section 16.

SECTION 4: First aid measures

4.1 Description of first-aid measures

General advice
First aiders need to protect themselves. Show this material safety data sheet to the doctor in attendance.

If inhaled
After inhalation: fresh air. Call in physician.

In case of skin contact
In case of skin contact: Take off immediately all contaminated clothing. Rinse skin with water/shower. Call a physician immediately.

In case of eye contact
After eye contact: rinse out with plenty of water. Immediately call in ophthalmologist. Remove contact lenses.

If swallowed
After swallowing: make victim drink water (two glasses at most), avoid vomiting (risk of perforation). Call a physician immediately. Do not attempt to neutralise.
4.2 **Most important symptoms and effects, both acute and delayed**
The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

4.3 **Indication of any immediate medical attention and special treatment needed**
No data available

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**SECTION 5: Firefighting measures**

5.1 **Extinguishing media**

*Suitable extinguishing media*
Water Foam Carbon dioxide (CO2) Dry powder

*Unsuitable extinguishing media*
For this substance/mixture no limitations of extinguishing agents are given.

5.2 **Special hazards arising from the substance or mixture**
Carbon oxides
Nitrogen oxides (NOx)
Combustible.
Vapors are heavier than air and may spread along floors.
Forms explosive mixtures with air at elevated temperatures.
Development of hazardous combustion gases or vapours possible in the event of fire.

5.3 **Advice for firefighters**
Stay in danger area only with self-contained breathing apparatus. Prevent skin contact by keeping a safe distance or by wearing suitable protective clothing.

5.4 **Further information**
Remove container from danger zone and cool with water. Suppress (knock down) gases/vapors/mists with a water spray jet. Prevent fire extinguishing water from contaminating surface water or the ground water system.

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**SECTION 6: Accidental release measures**

6.1 **Personal precautions, protective equipment and emergency procedures**
Advice for non-emergency personnel: Do not breathe vapors, aerosols. Avoid substance contact. Ensure adequate ventilation. Keep away from heat and sources of ignition. Evacuate the danger area, observe emergency procedures, consult an expert. For personal protection see section 8.

6.2 **Environmental precautions**
Do not let product enter drains. Risk of explosion.

6.3 **Methods and materials for containment and cleaning up**
Cover drains. Collect, bind, and pump off spills. Observe possible material restrictions (see sections 7 and 10). Take up carefully with liquid-absorbent material (e.g. Chemizorb®). Dispose of properly. Clean up affected area.

6.4 **Reference to other sections**
For disposal see section 13.
SECTION 7: Handling and storage

7.1 Precautions for safe handling

**Advice on protection against fire and explosion**
Keep away from open flames, hot surfaces and sources of ignition. Take precautionary measures against static discharge.

**Hygiene measures**
Immediately change contaminated clothing. Apply preventive skin protection. Wash hands and face after working with substance.
For precautions see section 2.2.

7.2 Conditions for safe storage, including any incompatibilities

**Storage conditions**
Keep container tightly closed in a dry and well-ventilated place. Keep away from heat and sources of ignition. Keep locked up or in an area accessible only to qualified or authorized persons.

**Storage stability**
Recommended storage temperature -20 °C
Heat sensitive.

**Storage class**
Storage class (TRGS 510): 3: Flammable liquids

7.3 Specific end use(s)
Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

**Ingredients with workplace control parameters**

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS-No.</th>
<th>Value</th>
<th>Control parameters</th>
<th>Basis</th>
</tr>
</thead>
<tbody>
<tr>
<td>4-tert-butylpyrocatechol</td>
<td>98-29-3</td>
<td>CEIL</td>
<td>2 mg/m3</td>
<td>USA. Workplace Environmental Exposure Levels (WEEL)</td>
</tr>
</tbody>
</table>

Remarks: Skin Dermal Sensitization Notation

8.2 Exposure controls

**Appropriate engineering controls**
Immediately change contaminated clothing. Apply preventive skin protection. Wash hands and face after working with substance.

**Personal protective equipment**

**Eye/face protection**
Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU). Tightly fitting safety goggles
Skin protection
This recommendation applies only to the product stated in the safety data sheet, supplied by us and for the designated use. When dissolving in or mixing with other substances and under conditions deviating from those stated in EN374 please contact the supplier of CE-approved gloves (e.g. KCL GmbH, D-36124 Eichenzell, Internet: www.kcl.de).

Full contact
Material: butyl-rubber
Minimum layer thickness: 0.7 mm
Break through time: 480 min
Material tested:Butoject® (KCL 898)

This recommendation applies only to the product stated in the safety data sheet, supplied by us and for the designated use. When dissolving in or mixing with other substances and under conditions deviating from those stated in EN374 please contact the supplier of CE-approved gloves (e.g. KCL GmbH, D-36124 Eichenzell, Internet: www.kcl.de).

Splash contact
Material: Nitrile rubber
Minimum layer thickness: 0.4 mm
Break through time: 30 min
Material tested:Camatril® (KCL 730 / Aldrich Z677442, Size M)

Body Protection
Flame retardant antistatic protective clothing.

Respiratory protection
required when vapours/aerosols are generated. Our recommendations on filtering respiratory protection are based on the following standards: DIN EN 143, DIN 14387 and other accompanying standards relating to the used respiratory protection system.

Control of environmental exposure
Do not let product enter drains. Risk of explosion.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

a) Appearance
   Form: clear, liquid
   Color: colorless, light yellow

b) Odor
   unpleasant

c) Odor Threshold
   No data available

d) pH
   8 at 25 °C (77 °F)

e) Melting point/freezing point
   Melting point/range: -50 °C (-58 °F)

f) Initial boiling point and boiling range
   79 - 82 °C 174 - 180 °F at 39 hPa - lit.

g) Flash point
   50 °C (122 °F) - closed cup - ASTM D 93

h) Evaporation rate
   No data available

i) Flammability (solid, gas)
   No data available
### Upper/lower flammability or explosive limits
- **Upper explosion limit:** 9.01 % (V)
- **Lower explosion limit:** 1.03 % (V)

### Vapor pressure
25 hPa at 20 °C (68 °F)

### Vapor density
No data available

### Density
- **Density:** 0.975 g/cm³ at 25 °C (77 °F)
- **Relative density:** No data available

### Water solubility
Soluble

### Partition coefficient: n-octanol/water
- **log Pow:** 1.54 at 25 °C (77 °F)

### Autoignition temperature
No data available

### Decomposition temperature
No data available

### Viscosity
No data available

### Explosive properties
No data available

### Oxidizing properties
No data available

### Other safety information
No data available

## SECTION 10: Stability and reactivity

### Reactivity
Vapor/air-mixtures are explosive at intense warming.

### Chemical stability
The product is chemically stable under standard ambient conditions (room temperature). Contains the following stabilizer(s):
- 4-tert-butylpyrocatechol (0.1 %)

### Possibility of hazardous reactions
Violent reactions possible with:
- Polymerisation initiators
- Peroxides
- Strong oxidizing agents
- Strong acids
- Strong bases

### Conditions to avoid
Heat.

### Incompatible materials
No data available

### Hazardous decomposition products
In the event of fire: see section 5
SECTION 11: Toxicological information

11.1 Information on toxicological effects

**Acute toxicity**
Acute toxicity estimate Oral - 336.34 mg/kg
(Calculation method)
LD50 Oral - Rat - male and female - 336 mg/kg
Inhalation: No data available
Acute toxicity estimate Dermal - 650.65 mg/kg
(Calculation method)
LD50 Dermal - Rabbit - male and female - 650 mg/kg
No data available

**Skin corrosion/irritation**
Skin - Rabbit
Result: Causes burns. - 1 h

**Serious eye damage/eye irritation**
Eyes - Rabbit
Result: Risk of serious damage to eyes.

**Respiratory or skin sensitization**
- Guinea pig
Result: May cause sensitization by skin contact.

**Germ cell mutagenicity**
Test Type: Ames test
Test system: S. typhimurium
Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 471
Result: negative

Species: Mouse

Result: negative

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

NTP: No ingredient 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 on OSHA’s list of regulated carcinogens.

**Reproductive toxicity**
No data available
No data available

**Specific target organ toxicity - single exposure**
No data available
Specific target organ toxicity - repeated exposure
No data available

Aspiration hazard
No data available

11.2 Additional Information
Repeated dose toxicity - Rat - male and female - Oral - NOAEL (No observed adverse effect level) - 20 mg/kg

RTECS: UU1040000
Material is extremely destructive to tissue of the mucous membranes and upper respiratory tract, eyes, and skin., spasm, inflammation and edema of the larynx, spasm, inflammation and edema of the bronchi, pneumonitis, pulmonary edema, burning sensation, Cough, wheezing, laryngitis, Shortness of breath, Headache, Nausea

SECTION 12: Ecological information

12.1 Toxicity
Toxicity to fish semi-static test LC50 - Oryzias latipes - 6.48 mg/l - 96 h (OECD Test Guideline 203)
Toxicity to daphnia and other aquatic invertebrates Immobilization EC50 - Daphnia magna (Water flea) - 9.48 mg/l - 48 h (OECD Test Guideline 202)
Toxicity to algae Growth inhibition EC50 - Selenastrum capricornutum (green algae) - 50.8 mg/l - 72 h (OECD Test Guideline 201)
Toxicity to bacteria Respiration inhibition EC50 - Sludge Treatment - 260 mg/l - 30 min (OECD Test Guideline 209)

12.2 Persistence and degradability
Biodegradability aerobic - Exposure time 28 d
Result: 22.6 % - Not readily biodegradable.

12.3 Bioaccumulative potential
No data available

12.4 Mobility in soil
No data available

12.5 Results of PBT and vPvB assessment
PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

12.6 Endocrine disrupting properties
No data available

12.7 Other adverse effects
No data available
SECTION 13: Disposal considerations

13.1 Waste treatment methods

Product
Waste material must be disposed of in accordance with the national and local regulations. Leave chemicals in original containers. No mixing with other waste. Handle uncleaned containers like the product itself.

SECTION 14: Transport information

DOT (US)
UN number: 3073   Class: 6.1 (3, 8)   Packing group: II
Proper shipping name: Vinylpyridines, stabilized
Reportable Quantity (RQ):
Poison Inhalation Hazard: No

IMDG
UN number: 3073   Class: 6.1 (3, 8)   Packing group: II
Proper shipping name: VINYLPYRIDINES, STABILIZED
EMS-No: F-E, S-C

IATA
UN number: 3073   Class: 6.1 (3, 8)   Packing group: II
Proper shipping name: Vinylpyridines, stabilized

SECTION 15: Regulatory information

SARA 302 Components
This material does not contain any components with a section 302 EHS TPQ.

SARA 313 Components
This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

Massachusetts Right To Know Components
No components are subject to the Massachusetts Right to Know Act.

SECTION 16: Other information

Relevant changes since previous version
10. Stability and reactivity

Further information
The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Sigma-Aldrich Corporation and its Affiliates shall not be held liable for any damage resulting from handling or from contact with the above product. See