

Creation Date 26-Sep-2009

Revision Date 19-Feb-2019

Revision Number 9

## SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

### 1.1. Product identification

**Product Description:** **2-Chloropyridine**  
**Cat No. :** **110010000; 110010050; 110011000; 110015000; 110010025**  
**Synonyms** alpha-chloropyridine; o-chloropyridine  
**CAS-No** 109-09-1  
**EC-No.** 203-646-3  
**Molecular Formula** C5 H4 Cl N

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

**Recommended Use** Laboratory chemicals.  
**Uses advised against** No Information available

### 1.3. Details of the supplier of the safety data sheet

**Company** **UK entity/business name**  
Fisher Scientific UK  
Bishop Meadow Road, Loughborough,  
Leicestershire LE11 5RG, United Kingdom

**EU entity/business name**  
Acros Organics BVBA  
Janssen Pharmaceuticaaan 3a  
2440 Geel, Belgium

**E-mail address** [begel.sdsdesk@thermofisher.com](mailto:begel.sdsdesk@thermofisher.com)

### 1.4. Emergency telephone number

For information **US** call: 001-800-ACROS-01 / **Europe** call: +32 14 57 52 11  
Emergency Number **US**:001-201-796-7100 / **Europe**: +32 14 57 52 99  
**CHEMTREC** Tel. No.**US**:001-800-424-9300 / **Europe**:001-703-527-3887

## SECTION 2: HAZARDS IDENTIFICATION

### 2.1. Classification of the substance or mixture

#### CLP Classification - Regulation (EC) No 1272/2008

##### Physical hazards

Based on available data, the classification criteria are not met

##### Health hazards

|                                    |                   |
|------------------------------------|-------------------|
| Acute oral toxicity                | Category 4 (H302) |
| Acute dermal toxicity              | Category 2 (H310) |
| Acute Inhalation Toxicity - Vapors | Category 2 (H330) |

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Skin Corrosion/irritation  
Serious Eye Damage/Eye Irritation  
Specific target organ toxicity - (repeated exposure)

Category 2 (H315)  
Category 1 (H318)  
Category 2 (H373)

### Environmental hazards

Acute aquatic toxicity  
Chronic aquatic toxicity

Category 1 (H400)  
Category 1 (H410)

## 2.2. Label elements



Signal Word

Danger

### **Hazard Statements**

H315 - Causes skin irritation  
H310 - Fatal in contact with skin  
H330 - Fatal if inhaled  
H318 - Causes serious eye damage  
H373 - May cause damage to organs through prolonged or repeated exposure  
H410 - Very toxic to aquatic life with long lasting effects  
H302 - Harmful if swallowed  
Combustible liquid

### **Precautionary Statements**

P280 - Wear protective gloves/ protective clothing/ eye protection/ face protection  
P310 - Immediately call a POISON CENTER or doctor/ physician  
P304 + P340 - IF INHALED: Remove to fresh air and keep at rest in a position comfortable for breathing  
P302 + P352 - IF ON SKIN: Wash with plenty of soap and water  
P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing  
P261 - Avoid breathing dust/ fume/ gas/ mist/ vapors/ spray

## 2.3. Other hazards

No information available

## **SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS**

### 3.1. Substances

| Component        | CAS-No   | EC-No.            | Weight % | CLP Classification - Regulation (EC) No 1272/2008                 |
|------------------|----------|-------------------|----------|---|
| 2-Chloropyridine | 109-09-1 | EEC No. 203-646-3 | >95      | Acute Tox. 4 (H302)<br>Acute Tox. 2 (H310)<br>Acute Tox. 2 (H330) |

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|  |  |  |  |   |
|--|--|--|--|---|
|  |  |  |  | Skin Irrit. 2 (H315)<br>Eye Dam. 1 (H318)<br>STOT RE 2 (H373)<br>Aquatic Acute 1 (H400)<br>Aquatic Chronic 1 (H410) |
|--|--|--|--|---|

Full text of Hazard Statements: see section 16

## SECTION 4: FIRST AID MEASURES

### 4.1. Description of first aid measures

|   |   |
|---|---|
| <b>General Advice</b>                     | Show this safety data sheet to the doctor in attendance. Immediate medical attention is required.   |
| <b>Eye Contact</b>                        | Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. In the case of contact with eyes, rinse immediately with plenty of water and seek medical advice.  |
| <b>Skin Contact</b>                       | Wash off immediately with plenty of water for at least 15 minutes. Immediate medical attention is required.   |
| <b>Ingestion</b>                          | Do not induce vomiting. Call a physician or Poison Control Center immediately.  |
| <b>Inhalation</b>                         | Move to fresh air. If breathing is difficult, give oxygen. Do not use mouth-to-mouth method if victim ingested or inhaled the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. Immediate medical attention is required. |
| <b>Self-Protection of the First Aider</b> | Use personal protective equipment.  |

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

Breathing difficulties. Causes eye burns. . Symptoms of overexposure may be headache, dizziness, tiredness, nausea and vomiting

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

**Notes to Physician** Treat symptomatically.

## SECTION 5: FIREFIGHTING MEASURES

### 5.1. Extinguishing media

#### Suitable Extinguishing Media

Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide. Cool closed containers exposed to fire with water spray.

#### Extinguishing media which must not be used for safety reasons

No information available.

### 5.2. Special hazards arising from the substance or mixture

Combustible material. Flammable. Keep product and empty container away from heat and sources of ignition. Risk of ignition. Containers may explode when heated. Do not allow run-off from fire fighting to enter drains or water courses.

#### Hazardous Combustion Products

Hydrogen chloride gas, Nitrogen oxides (NOx), Thermal decomposition can lead to release of irritating gases and vapors, Carbon

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monoxide (CO), Carbon dioxide (CO<sub>2</sub>), Phosgene.

## **5.3. Advice for firefighters**

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear. Thermal decomposition can lead to release of irritating gases and vapors.

## **SECTION 6: ACCIDENTAL RELEASE MEASURES**

### **6.1. Personal precautions, protective equipment and emergency procedures**

Use personal protective equipment. Ensure adequate ventilation. Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak. Remove all sources of ignition. Take precautionary measures against static discharges.

### **6.2. Environmental precautions**

Do not flush into surface water or sanitary sewer system. Do not allow material to contaminate ground water system. Prevent product from entering drains. Local authorities should be advised if significant spillages cannot be contained. See Section 12 for additional ecological information. Avoid release to the environment. Collect spillage.

### **6.3. Methods and material for containment and cleaning up**

Keep in suitable, closed containers for disposal. Soak up with inert absorbent material. Remove all sources of ignition.

### **6.4. Reference to other sections**

Refer to protective measures listed in Sections 8 and 13.

## **SECTION 7: HANDLING AND STORAGE**

### **7.1. Precautions for safe handling**

Use only under a chemical fume hood. Do not breathe vapors or spray mist. Do not get in eyes, on skin, or on clothing. Wear personal protective equipment. Do not ingest. Keep away from open flames, hot surfaces and sources of ignition.

#### **Hygiene Measures**

Handle in accordance with good industrial hygiene and safety practice.

### **7.2. Conditions for safe storage, including any incompatibilities**

Keep containers tightly closed in a dry, cool and well-ventilated place. Keep away from heat and sources of ignition.

### **7.3. Specific end use(s)**

Use in laboratories

## **SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION**

### **8.1. Control parameters**

#### **Exposure limits**

This product, as supplied, does not contain any hazardous materials with occupational exposure limits established by the region specific regulatory bodies

#### **Biological limit values**

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This product, as supplied, does not contain any hazardous materials with biological limits established by the region specific regulatory bodies

## Monitoring methods

BS EN 14042:2003 Title Identifier: Workplace atmospheres. Guide for the application and use of procedures for the assessment of exposure to chemical and biological agents.

MDHS70 General methods for sampling airborne gases and vapours

**Derived No Effect Level (DNEL)** No information available

| <u>Route of exposure</u>     | <u>Acute effects (local)</u> | <u>Acute effects (systemic)</u> | <u>Chronic effects (local)</u> | <u>Chronic effects (systemic)</u> |
|------------------------------|------------------------------|---------------------------------|--------------------------------|-----------------------------------|
| Oral<br>Dermal<br>Inhalation |                              |                                 |                                |                                   |

**Predicted No Effect Concentration (PNEC)** No information available.

## 8.2. Exposure controls

### Engineering Measures

Ensure adequate ventilation, especially in confined areas. Ensure that eyewash stations and safety showers are close to the workstation location.

Wherever possible, engineering control measures such as the isolation or enclosure of the process, the introduction of process or equipment changes to minimise release or contact, and the use of properly designed ventilation systems, should be adopted to control hazardous materials at source

### Personal protective equipment

**Eye Protection** Goggles (European standard - EN 166)

**Hand Protection** Protective gloves

| <u>Glove material</u>                               | <u>Breakthrough time</u>          | <u>Glove thickness</u> | <u>EU standard</u> | <u>Glove comments</u> |
|---|-----------------------------------|------------------------|--------------------|-----------------------|
| Nitrile rubber<br>Neoprene<br>Natural rubber<br>PVC | See manufacturers recommendations | -                      | EN 374             | (minimum requirement) |

**Skin and body protection** Long sleeved clothing

Inspect gloves before use.

Please observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves. (Refer to manufacturer/supplier for information)

Ensure gloves are suitable for the task: Chemical compatibility, Dexterity, Operational conditions, User susceptibility, e.g. sensitisation effects, also take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion.

Remove gloves with care avoiding skin contamination.

**Respiratory Protection** When workers are facing concentrations above the exposure limit they must use appropriate certified respirators. To protect the wearer, respiratory protective equipment must be the correct fit and be used and maintained properly

**Large scale/emergency use** Use a NIOSH/MSHA or European Standard EN 136 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced  
**Recommended Filter type:** Organic gases and vapours filter Type A Brown conforming to EN14387

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**Small scale/Laboratory use** Use a NIOSH/MSHA or European Standard EN 149:2001 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.  
**Recommended half mask:-** Valve filtering: EN405; or; Half mask: EN140; plus filter, EN 141  
When RPE is used a face piece Fit Test should be conducted

**Environmental exposure controls** Prevent product from entering drains. Do not allow material to contaminate ground water system. Local authorities should be advised if significant spillages cannot be contained.

## SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

### 9.1. Information on basic physical and chemical properties

|  |                               |  |
|--|-------------------------------|--|
| <b>Appearance</b>                              | Clear                         |  |
| <b>Physical State</b>                          | Liquid                        |  |
| <b>Odor</b>                                    | Characteristic                |  |
| <b>Odor Threshold</b>                          | No data available             |  |
| <b>pH</b>                                      | 6-7                           |  |
| <b>Melting Point/Range</b>                     | -46 °C / -50.8 °F             |  |
| <b>Softening Point</b>                         | No data available             |  |
| <b>Boiling Point/Range</b>                     | 168 - 170 °C / 334.4 - 338 °F |  |
| <b>Flash Point</b>                             | 64 °C / 147.2 °F              | <b>Method -</b> No information available |
| <b>Evaporation Rate</b>                        | No data available             |  |
| <b>Flammability (solid,gas)</b>                | Not applicable                | Liquid                                   |
| <b>Explosion Limits</b>                        | No data available             |  |
| <b>Vapor Pressure</b>                          | 2.91 hPa @ 25 °C              | Measured                                 |
| <b>Vapor Density</b>                           | No data available             | (Air = 1.0)                              |
| <b>Specific Gravity / Density</b>              | 1.209                         |  |
| <b>Bulk Density</b>                            | Not applicable                | Liquid                                   |
| <b>Water Solubility</b>                        | 27 g/L (20°C)                 |  |
| <b>Solubility in other solvents</b>            | No information available      |  |
| <b>Partition Coefficient (n-octanol/water)</b> |                               |  |
| <b>Component</b>                               | <b>log Pow</b>                |  |
| 2-Chloropyridine                               | 1.22                          |  |
| <b>Autoignition Temperature</b>                | 585 °C / 1085 °F              |  |
| <b>Decomposition Temperature</b>               | No data available             |  |
| <b>Viscosity</b>                               | No data available             |  |
| <b>Explosive Properties</b>                    | No information available      | explosive air/vapour mixtures possible   |
| <b>Oxidizing Properties</b>                    | No information available      |  |

### 9.2. Other information

**Molecular Formula** C5 H4 Cl N  
**Molecular Weight** 113.55

## SECTION 10: STABILITY AND REACTIVITY

**10.1. Reactivity** None known, based on information available

**10.2. Chemical stability** Stable under normal conditions.

**10.3. Possibility of hazardous reactions**

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**Hazardous Polymerization** No information available.  
**Hazardous Reactions** None under normal processing.

## 10.4. Conditions to avoid

Incompatible products. Excess heat. Keep away from open flames, hot surfaces and sources of ignition.

## 10.5. Incompatible materials

Strong acids. Peroxides. Strong oxidizing agents.

## 10.6. Hazardous decomposition products

Hydrogen chloride gas. Nitrogen oxides (NO<sub>x</sub>). Thermal decomposition can lead to release of irritating gases and vapors. Carbon monoxide (CO). Carbon dioxide (CO<sub>2</sub>). Phosgene.

## SECTION 11: TOXICOLOGICAL INFORMATION

### 11.1. Information on toxicological effects

#### Product Information

#### (a) acute toxicity;

Oral Category 4  
Dermal Category 2  
Inhalation Category 2

| Component        | LD50 Oral                | LD50 Dermal                | LC50 Inhalation               |
|------------------|--------------------------|----------------------------|-------------------------------|
| 2-Chloropyridine | LD50 = 342 mg/kg ( Rat ) | LD50 = 64 mg/kg ( Rabbit ) | LC50 <= 6.05 mg/L ( Rat ) 6 h |

(b) skin corrosion/irritation; Category 2

(c) serious eye damage/irritation; Category 1

#### (d) respiratory or skin sensitization;

Respiratory No data available  
Skin No data available

(e) germ cell mutagenicity; No data available

(f) carcinogenicity; No data available

There are no known carcinogenic chemicals in this product

(g) reproductive toxicity; No data available

(h) STOT-single exposure; No data available

(i) STOT-repeated exposure; Category 2

Target Organs No information available.

(j) aspiration hazard; No data available

**Other Adverse Effects** The toxicological properties have not been fully investigated. See actual entry in RTECS for

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complete information

**Symptoms / effects, both acute and delayed** Symptoms of overexposure may be headache, dizziness, tiredness, nausea and vomiting delayed

## SECTION 12: ECOLOGICAL INFORMATION

### 12.1. Toxicity

#### Ecotoxicity effects

Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment. The product contains following substances which are hazardous for the environment.

| Component        | Freshwater Fish | Water Flea | Freshwater Algae | Microtox   |
|------------------|-----------------|------------|------------------|--|
| 2-Chloropyridine |                 |            |                  | EC50 = 70.0 mg/L 5 min<br>EC50 = 71.6 mg/L 15 min<br>EC50 = 71.6 mg/L 30 min |

### 12.2. Persistence and degradability

#### Persistence

#### Degradation in sewage treatment plant

Not readily biodegradable

Soluble in water, Persistence is unlikely, based on information available.

Contains substances known to be hazardous to the environment or not degradable in waste water treatment plants.

### 12.3. Bioaccumulative potential

Bioaccumulation is unlikely

| Component        | log Pow | Bioconcentration factor (BCF) |
|------------------|---------|-------------------------------|
| 2-Chloropyridine | 1.22    | No data available             |

### 12.4. Mobility in soil

The product is water soluble, and may spread in water systems. Will likely be mobile in the environment due to its water solubility. Highly mobile in soils

### 12.5. Results of PBT and vPvB assessment

No data available for assessment.

### 12.6. Other adverse effects

#### Endocrine Disruptor Information Persistent Organic Pollutant Ozone Depletion Potential

This product does not contain any known or suspected endocrine disruptors

This product does not contain any known or suspected substance

This product does not contain any known or suspected substance

## SECTION 13: DISPOSAL CONSIDERATIONS

### 13.1. Waste treatment methods

#### Waste from Residues / Unused Products

Should not be released into the environment. Waste is classified as hazardous. Dispose of in accordance with the European Directives on waste and hazardous waste. Dispose of in accordance with local regulations.

#### Contaminated Packaging

Dispose of this container to hazardous or special waste collection point.

#### European Waste Catalogue (EWC)

According to the European Waste Catalogue, Waste Codes are not product specific, but application specific.

#### Other Information

Do not dispose of waste into sewer. Waste codes should be assigned by the user based on the application for which the product was used. Do not empty into drains. Do not let this chemical enter the environment.

## SECTION 14: TRANSPORT INFORMATION

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## IMDG/IMO

**14.1. UN number** UN2822  
**14.2. UN proper shipping name** 2-CHLOROPYRIDINE  
**14.3. Transport hazard class(es)** 6.1  
**14.4. Packing group** II

## ADR

**14.1. UN number** UN2822  
**14.2. UN proper shipping name** 2-CHLOROPYRIDINE  
**14.3. Transport hazard class(es)** 6.1  
**14.4. Packing group** II

## IATA

**14.1. UN number** UN2822  
**14.2. UN proper shipping name** 2-CHLOROPYRIDINE  
**14.3. Transport hazard class(es)** 6.1  
**14.4. Packing group** II

**14.5. Environmental hazards** Dangerous for the environment

**14.6. Special precautions for user** No special precautions required

**14.7. Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code** Not applicable, packaged goods

## SECTION 15: REGULATORY INFORMATION

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

**International Inventories** X = listed.

| Component        | EINECS    | ELINCS | NLP | TSCA | DSL | NDSL | PICCS | ENCS | IECSC | AICS | KECL         |
|------------------|-----------|--------|-----|------|-----|------|-------|------|-------|------|--------------|
| 2-Chloropyridine | 203-646-3 | -      |     | X    | -   | X    | X     | X    | X     | X    | KE-0589<br>1 |

### **National Regulations**

Take note of Control of Substances Hazardous to Health Regulations (COSHH) 2002 and 2005 Amendment.

### 15.2. Chemical safety assessment

A Chemical Safety Assessment/Report (CSA/CSR) has not been conducted

## SECTION 16: OTHER INFORMATION

### Full text of H-Statements referred to under sections 2 and 3

H302 - Harmful if swallowed  
H310 - Fatal in contact with skin

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H330 - Fatal if inhaled  
H315 - Causes skin irritation  
H318 - Causes serious eye damage  
H373 - May cause damage to organs through prolonged or repeated exposure  
H400 - Very toxic to aquatic life  
H410 - Very toxic to aquatic life with long lasting effects

## Legend

**CAS** - Chemical Abstracts Service

**EINECS/ELINCS** - European Inventory of Existing Commercial Chemical Substances/EU List of Notified Chemical Substances

**PICCS** - Philippines Inventory of Chemicals and Chemical Substances

**IECSC** - Chinese Inventory of Existing Chemical Substances

**KECL** - Korean Existing and Evaluated Chemical Substances

**TSCA** - United States Toxic Substances Control Act Section 8(b) Inventory

**DSL/NDL** - Canadian Domestic Substances List/Non-Domestic Substances List

**ENCS** - Japanese Existing and New Chemical Substances

**AICS** - Australian Inventory of Chemical Substances

**NZIoC** - New Zealand Inventory of Chemicals

**WEL** - Workplace Exposure Limit

**ACGIH** - American Conference of Governmental Industrial Hygienists

**DNEL** - Derived No Effect Level

**RPE** - Respiratory Protective Equipment

**LC50** - Lethal Concentration 50%

**NOEC** - No Observed Effect Concentration

**PBT** - Persistent, Bioaccumulative, Toxic

**TWA** - Time Weighted Average

**IARC** - International Agency for Research on Cancer

**PNEC** - Predicted No Effect Concentration

**LD50** - Lethal Dose 50%

**EC50** - Effective Concentration 50%

**POW** - Partition coefficient Octanol:Water

**vPvB** - very Persistent, very Bioaccumulative

**ADR** - European Agreement Concerning the International Carriage of Dangerous Goods by Road

**IMO/IMDG** - International Maritime Organization/International Maritime Dangerous Goods Code

**OECD** - Organisation for Economic Co-operation and Development

**BCF** - Bioconcentration factor

### **Key literature references and sources for data**

Suppliers safety data sheet, Chemadvisor - LOLI, Merck index, RTECS

**ICAO/IATA** - International Civil Aviation Organization/International Air Transport Association

**MARPOL** - International Convention for the Prevention of Pollution from Ships

**ATE** - Acute Toxicity Estimate

**VOC** - Volatile Organic Compounds

### **Training Advice**

Chemical incident response training.

**Creation Date** 26-Sep-2009

**Revision Date** 19-Feb-2019

**Revision Summary** Not applicable.

**This safety data sheet complies with the requirements of Regulation (EC) No. 1907/2006**

### **Disclaimer**

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text

**End of Safety Data Sheet**