# SAFETY DATA SHEET

**Revision Date** 10-Apr-2014 **Revision Number** 5

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

### 1.1. Product identifier

**Product Description:** **3-Thiophenecarbonyl chloride**
**Cat No. :** **456020000; 456020100; 456020500**
**CAS-No** 41507-35-1
**EC-No.** 255-420-9
**Molecular Formula** C5 H3 Cl O S

### 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** Acros Organics BVBA
Janssen Pharmaceuticalaan 3a
2440 Geel, Belgium
**E-mail address** 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**

| | |
|---|---|
| Flammable solids | Category 2 |

**Health hazards**

| | |
|---|---|
| Skin Corrosion/irritation | Category 1 B |
| Serious Eye Damage/Eye Irritation | Category 1 |

**Environmental hazards**
Based on available data, the classification criteria are not met

**Classification according to EU Directives 67/548/EEC or 1999/45/EC**

**Symbol(s)** C - Corrosive
F - Highly flammable

**R-phrase(s)** R11 - Highly flammable
R14 - Reacts violently with water
R29 - Contact with water liberates toxic gas
R34 - Causes burns

## SECTION 2: HAZARDS IDENTIFICATION

*For the full text of the R-phrases and H-Statements mentioned in this Section, see Section 16*

### 2.2. Label elements

**Signal Word** **Danger**

**Hazard Statements**

H228 - Flammable solid
H314 - Causes severe skin burns and eye damage
EUH029 - Contact with water liberates toxic gas
EUH014 - Reacts violently with water

**Precautionary Statements**

P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
P310 - Immediately call a POISON CENTER or doctor/ physician
P210 - Keep away from heat/sparks/open flames/hot surfaces. - No smoking
P280 - Wear protective gloves/ protective clothing/ eye protection/ face protection
P303 + P361 + P353 - IF ON SKIN (or hair): Remove/ Take off immediately all contaminated clothing. Rinse skin with water/ shower
P402 + P404 - Store in a dry place. Store in a closed container

### 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 | DSD Classification - 67/548/EEC |
|---|---|---|---|---|---|
| 3-Thenoyl chloride | 41507-35-1 | EEC No. 255-420-9 | >95 | Flam. Sol. 2 (H228)<br>Skin Corr. 1B (H314)<br>Eye Dam. 1 (H318)<br>(EUH014)<br>(EUH029) | F;R11<br>R14-29<br>C;R34 |

*For the full text of the R-phrases and H-Statements mentioned in this Section, see Section 16*

## SECTION 4: FIRST AID MEASURES

### 4.1. Description of first aid measures

**General Advice** Immediate medical attention is required. Show this safety data sheet to the doctor in attendance.

**Eye Contact** Immediate medical attention is required. Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Keep eye wide open while rinsing.

| | |
|---|---|
| **Skin Contact** | Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Call a physician immediately. |
| **Ingestion** | Do not induce vomiting. Immediate medical attention is required. Never give anything by mouth to an unconscious person. Drink plenty of water. |
| **Inhalation** | Move to fresh air. If breathing is difficult, give oxygen. Call a physician or Poison Control Center immediately. Do not use mouth-to-mouth resuscitation if victim ingested or inhaled the substance; induce artificial respiration with a respiratory medical device. |
| **Protection of First-aiders** | Ensure that medical personnel are aware of the material(s) involved, take precautions to protect themselves and prevent spread of contamination |

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

Causes burns by all exposure routes. . Product is a corrosive material. Use of gastric lavage or emesis is contraindicated. Possible perforation of stomach or esophagus should be investigated. Ingestion causes severe swelling, severe damage to the delicate tissue and danger of perforation.

### 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**
$CO_2$, dry chemical, dry sand, alcohol-resistant foam.

**Extinguishing media which must not be used for safety reasons**
Water.

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

Reacts violently with water.

**Hazardous Combustion Products**
Hydrogen chloride gas, Carbon monoxide (CO), Carbon dioxide ($CO_2$), Sulfur oxides.

### 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

Evacuate personnel to safe areas. Use personal protective equipment. Avoid contact with skin, eyes and clothing.

### 6.2. Environmental precautions

Do not allow material to contaminate ground water system. Should not be released into the environment.

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

Do not expose spill to water.

### 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

Do not allow contact with water. Ensure adequate ventilation. Do not breathe dust. Do not get in eyes, on skin, or on clothing.

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

Keep away from water. Keep container tightly closed in a dry and well-ventilated place. Keep away from heat and sources of ignition. Keep refrigerated. Store under an inert atmosphere.

### 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**
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.
MDHS14/3 General methods for sampling and gravimetric analysis of respirable and inhalable dust

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

| Route of exposure | Acute effects (local) | Acute effects (systemic) | Chronic effects (local) | Chronic effects (systemic) |
|---|---|---|---|---|
| **Oral** | | | | |
| **Dermal** | | | | |
| **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

| Glove material | Breakthrough time | Glove thickness | EU standard | Glove comments |
|---|---|---|---|---|
| Natural rubber<br>Nitrile rubber<br>Neoprene<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 compatability, 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:** Particulates filter conforming to EN 143.

**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:-** Particle filtering: EN149:2001
When RPE is used a face piece Fit Test should be conducted.

**Hygiene Measures** Handle in accordance with good industrial hygiene and safety practice.

**Environmental exposure controls** No information available.

## SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

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

| | | |
|---|---|---|
| **Appearance** | White to yellow | |
| **Physical State** | Solid. | |
| **Odor** | No information available | |
| **Odor Threshold** | No data available | |
| **pH** | No information available. | |
| **Melting Point/Range** | 50 - 54°C / 122 - 129.2°F | |
| **Softening Point** | No data available | |
| **Boiling Point/Range** | No information available. | |
| **Flash Point** | 51°C / 123.8°F | **Method -** No information available |
| **Evaporation Rate** | Not applicable | Solid |
| **Flammability (solid,gas)** | No information available | |
| **Explosion Limits** | No data available. | |
| **Vapor Pressure** | No data available | |
| **Vapor Density** | Not applicable | Solid |
| **Specific Gravity / Density** | No data available | |
| **Bulk Density** | No data available | |
| **Water Solubility** | No information available | |
| **Solubility in other solvents** | No information available | |

| | | |
|---|---|---|
| **Partition Coefficient (n-octanol/water)** | **Component**<br>3-Thenoyl chloride | **log Pow**<br>1.562 |
| **Autoignition Temperature** | Not applicable | |
| **Decomposition temperature** | No data available | |
| **Viscosity** | Not applicable | Solid |
| **Explosive Properties** | No information available | |
| **Oxidizing Properties** | No information available | |

**9.2. Other information**

| | |
|---|---|
| **Molecular Formula** | C5 H3 Cl O S |
| **Molecular Weight** | 146.6 |

## SECTION 10: STABILITY AND REACTIVITY

**10.1. Reactivity**

None known, based on information available.

**10.2. Chemical stability**

Moisture sensitive. Reacts violently with water.

**10.3. Possibility of hazardous reactions**

| | |
|---|---|
| **Hazardous Polymerization** | Hazardous polymerization does not occur. |
| **Hazardous Reactions** | Reacts violently with water.. Contact with water liberates toxic gas. |

**10.4. Conditions to avoid**

Exposure to moist air or water, Heat, flames and sparks.

**10.5. Incompatible materials**

Water. Strong oxidizing agents. Strong acids. Strong bases. Amines. Strong reducing agents. Acid chlorides.

**10.6. Hazardous decomposition products**

Hydrogen chloride gas, Carbon monoxide (CO), Carbon dioxide ($CO_2$), Sulfur oxides.

## SECTION 11: TOXICOLOGICAL INFORMATION

**11.1. Information on toxicological effects**

**Product Information** No acute toxicity information is available for this product

**(a) acute toxicity;**

| | |
|---|---|
| **Oral** | No data available |
| **Dermal** | No data available |
| **Inhalation** | No data available |

**(b) skin corrosion/irritation;** Category 1 B

**(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;** No data available

**Target Organs** No information available

**(j) aspiration hazard;** Not applicable
Solid

**Other Adverse Effects** The toxicological properties have not been fully investigated.
**Symptoms / effects, both acute and delayed** Product is a corrosive material. Use of gastric lavage or emesis is contraindicated. Possible perforation of stomach or esophagus should be investigated. Ingestion causes severe swelling, severe damage to the delicate tissue and danger of perforation.

## SECTION 12: ECOLOGICAL INFORMATION

**12.1. Toxicity**
**Ecotoxicity effects** Contains no substances known to be hazardous to the environment or that are not degradable in waste water treatment plants

**12.2. Persistence and degradability** No information available
**Persistence** Persistence is unlikely.

**12.3. Bioaccumulative potential** Bioaccumulation is unlikely

| Component | log Pow | Bioconcentration factor (BCF) |
|---|---|---|
| 3-Thenoyl chloride | 1.562 | No data available |

**12.4. Mobility in soil** No information available.

**12.5. Results of PBT and vPvB assessment** No data available for assessment

**12.6. Other adverse effects**
**Endocrine Disruptor Information** This product does not contain any known or suspected endocrine disruptors
**Persistent Organic Pollutant** This product does not contain any known or suspected substance
**Ozone Depletion Potential** This product does not contain any known or suspected substance

## SECTION 13: DISPOSAL CONSIDERATIONS

**13.1. Waste treatment methods**

**Waste from Residues / Unused Products** 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.. Empty containers retain product residue, (liquid and/or vapor), and can be dangerous. Keep product and empty container away from heat and sources of ignition.

**European Waste Catalogue (EWC)** According to the European Waste Catalogue, Waste Codes are not product specific, but application specific.

**Other Information** Waste codes should be assigned by the user based on the application for which the product was used. Do not dispose of waste into sewer. Can be incinerated, when in compliance with local regulations. Do not empty into drains. Large amounts will affect pH and harm aquatic organisms.

## SECTION 14: TRANSPORT INFORMATION

**IMDG/IMO**

| | |
|---|---|
| **14.1. UN number** | UN2921 |
| **14.2. UN proper shipping name** | Corrosive solid, flammable, n.o.s |
| **14.3. Transport hazard class(es)** | 8 |
| **Subsidiary Hazard Class** | 4.1 |
| **14.4. Packing group** | II |

**ADR**

| | |
|---|---|
| **14.1. UN number** | UN2921 |
| **14.2. UN proper shipping name** | Corrosive solid, flammable, n.o.s |
| **14.3. Transport hazard class(es)** | 8 |
| **Subsidiary Hazard Class** | 4.1 |
| **14.4. Packing group** | II |

**IATA**

| | |
|---|---|
| **14.1. UN number** | UN2921 |
| **14.2. UN proper shipping name** | Corrosive solid, flammable, n.o.s |
| **14.3. Transport hazard class(es)** | 8 |
| **Subsidiary Hazard Class** | 4.1 |
| **14.4. Packing group** | II |
| **14.5. Environmental hazards** | No hazards identified |
| **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 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 3-Thenoyl chloride | 255-420-9 | - | | - | - | - | - | - | - | - | - |

**National Regulations**

Take note of Control of Substances Hazardous to Health Regulations (COSHH) 2002 and 2005 Amendment
Take note of Dir 94/33/EC on the protection of young people at work
Take note of Directive 98/24/EC on the protection of the health and safety of workers from the risks related to chemical agents at work

**15.2. Chemical safety assessment**

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

## SECTION 16: OTHER INFORMATION

## SECTION 16: OTHER INFORMATION

**Full text of R-phrases referred to under sections 2 and 3**
R34 - Causes burns
R11 - Highly flammable
R29 - Contact with water liberates toxic gas
R14 - Reacts violently with water

**Full text of H-Statements referred to under sections 2 and 3**
H228 - Flammable solid
H314 - Causes severe skin burns and eye damage
EUH014 - Reacts violently with water
EUH029 - Contact with water liberates toxic gas
H318 - Causes serious eye damage

**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/NDSL** - 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
**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

**Key literature references and sources for data**
Suppliers safety data sheet,
Chemadvisor - LOLI,
Merck index,
RTECS

**Training Advice**
Chemical hazard awareness training, incorporating labelling, Safety Data Sheets (SDS), Personal Protective Equipment (PPE) and hygiene.
Use of personal protective equipment, covering appropriate selection, compatibility, breakthrough thresholds, care, maintenance, fit and standards.
First aid for chemical exposure, including the use of eye wash and safety showers.

| | |
|---|---|
| **Revision Date** | 10-Apr-2014 |
| **Revision Summary** | Not applicable |

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

**Disclaimer**

**The information provided on 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 guide for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered as 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 material or in any process, unless specified in the text.**

## End of Safety Data Sheet