



# SAFETY DATA SHEET

Creation Date 11-Jul-2016

Revision Date 11-Jul-2016

Revision Number 1

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

### 1.1. Product identification

|                      |                                        |
|----------------------|----------------------------------------|
| Product Description: | <b>Butyrolin</b>                       |
| Cat No. :            | <b>460760000; 460760050; 460760250</b> |
| Synonyms             | 5-Hydroxy-4-octanone                   |
| CAS-No               | 496-77-5                               |
| EC-No.               | EEC No. 207-830-4                      |
| Molecular Formula    | C8 H16 O2                              |

### 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<br>Janssen Pharmaceuticaaan 3a<br>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

Based on available data, the classification criteria are not met

##### Health hazards

|                                                    |                   |
|----------------------------------------------------|-------------------|
| Acute oral toxicity                                | Category 4 (H302) |
| Acute dermal toxicity                              | Category 4 (H312) |
| Acute Inhalation Toxicity - Vapors                 | Category 4 (H332) |
| Skin Corrosion/irritation                          | Category 2 (H315) |
| Serious Eye Damage/Eye Irritation                  | Category 2 (H319) |
| Specific target organ toxicity - (single exposure) | Category 3 (H335) |

##### Environmental hazards

Based on available data, the classification criteria are not met

### 2.2. Label elements

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## Signal Word

## Warning

### Hazard Statements

H302 - Harmful if swallowed  
H312 - Harmful in contact with skin  
H332 - Harmful if inhaled  
H315 - Causes skin irritation  
H319 - Causes serious eye irritation  
H335 - May cause respiratory irritation  
Combustible liquid

### Precautionary Statements

P280 - Wear protective gloves/ protective clothing/ eye protection/ face protection  
P301 + P330 + P331 - IF SWALLOWED: rinse mouth. Do NOT induce vomiting  
P302 + P352 - IF ON SKIN: Wash with plenty of soap and water  
P304 + P340 - IF INHALED: Remove to fresh air and keep at rest in a position comfortable for breathing  
P312 - Call a POISON CENTER or doctor/ physician if you feel unwell  
P337 + P313 - If eye irritation persists: Get medical advice/ attention

### 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                                                                                 |
|------------------------|----------|-------------------|----------|-----------------------------------------------------------------------------------------------------------------------------------|
| 4-Octanone, 5-hydroxy- | 496-77-5 | EEC No. 207-830-4 | >95      | Acute Tox 4 (H302)<br>Acute Tox 4 (H312)<br>Acute Tox 4 (H332)<br>Skin Irrit. 2 (H315)<br>Eye Irrit. 2 (H319)<br>STOT SE 3 (H335) |

Full text of Hazard Statements: see section 16

## SECTION 4: FIRST AID MEASURES

### 4.1. Description of first aid measures

#### General Advice

If symptoms persist, call a physician.

#### Eye Contact

Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes.  
Obtain medical attention.

#### Skin Contact

Wash off immediately with plenty of water for at least 15 minutes. If skin irritation persists, call a physician.

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|                                   |                                                                                                                                                  |
|-----------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Ingestion</b>                  | Clean mouth with water and drink afterwards plenty of water.                                                                                     |
| <b>Inhalation</b>                 | Move to fresh air. If not breathing, give artificial respiration. Get medical attention if symptoms occur.                                       |
| <b>Protection of First-aiders</b> | 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**

None reasonably foreseeable. . 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. Containers may explode when heated.

#### **Hazardous Combustion Products**

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

### **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.

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

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

Ensure adequate ventilation. Use personal protective equipment. Remove all sources of ignition. Take precautionary measures against static discharges.

### **6.2. Environmental precautions**

Should not be released into the environment.

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

Soak up with inert absorbent material. Keep in suitable, closed containers for disposal. 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**

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Wear personal protective equipment. Ensure adequate ventilation. Do not get in eyes, on skin, or on clothing. Avoid ingestion and inhalation. Keep away from open flames, hot surfaces and sources of ignition.

## Hygiene Measures

Handle in accordance with good industrial hygiene and safety practice. Keep away from food, drink and animal feeding stuffs. Do not eat, drink or smoke when using this product. Remove and wash contaminated clothing before re-use. Wash hands before breaks and at the end of workday.

## 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

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> | <b>Acute effects (local)</b> | <b>Acute effects (systemic)</b> | <b>Chronic effects (local)</b> | <b>Chronic effects (systemic)</b> |
|--------------------------|------------------------------|---------------------------------|--------------------------------|-----------------------------------|
| Oral                     |                              |                                 |                                |                                   |
| Dermal                   |                              |                                 |                                |                                   |
| Inhalation               |                              |                                 |                                |                                   |

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

### 8.2. Exposure controls

#### Engineering Measures

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

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

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## Personal protective equipment

**Eye Protection**  
**Hand Protection**

Goggles (European standard - EN 166)  
Protective gloves

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

**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

### 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** No information available.

## SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

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

|                                                |                             |                                          |
|------------------------------------------------|-----------------------------|------------------------------------------|
| <b>Appearance</b>                              | Yellow                      |                                          |
| <b>Physical State</b>                          | Liquid                      |                                          |
| <b>Odor</b>                                    | No information available    |                                          |
| <b>Odor Threshold</b>                          | No data available           |                                          |
| <b>pH</b>                                      | No information available    |                                          |
| <b>Melting Point/Range</b>                     | No data available           |                                          |
| <b>Softening Point</b>                         | No data available           |                                          |
| <b>Boiling Point/Range</b>                     | 80 - 86 °C / 176 - 186.8 °F | @12mmHg                                  |
| <b>Flash Point</b>                             | 71 °C / 159.8 °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>                          | No data available           |                                          |
| <b>Vapor Density</b>                           | No data available           | (Air = 1.0)                              |
| <b>Specific Gravity / Density</b>              | No data available           |                                          |
| <b>Bulk Density</b>                            | Not applicable              | Liquid                                   |
| <b>Water Solubility</b>                        | Insoluble                   |                                          |
| <b>Solubility in other solvents</b>            | No information available    |                                          |
| <b>Partition Coefficient (n-octanol/water)</b> |                             |                                          |

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|                           |                          |                                        |
|---------------------------|--------------------------|----------------------------------------|
| Autoignition Temperature  | No data available        |                                        |
| Decomposition Temperature | No data available        |                                        |
| Viscosity                 | No data available        |                                        |
| Explosive Properties      | No information available | explosive air/vapour mixtures possible |
| Oxidizing Properties      | No information available |                                        |

## 9.2. Other information

|                   |           |
|-------------------|-----------|
| Molecular Formula | C8 H16 O2 |
| Molecular Weight  | 144.22    |

## SECTION 10: STABILITY AND REACTIVITY

|                         |                                            |
|-------------------------|--------------------------------------------|
| <u>10.1. Reactivity</u> | None known, based on information available |
|-------------------------|--------------------------------------------|

|                                 |                                 |
|---------------------------------|---------------------------------|
| <u>10.2. Chemical stability</u> | Stable under normal conditions. |
|---------------------------------|---------------------------------|

### 10.3. Possibility of hazardous reactions

|                          |                               |
|--------------------------|-------------------------------|
| Hazardous Polymerization | No information available.     |
| Hazardous Reactions      | None under normal processing. |

|                                  |                                                                                          |
|----------------------------------|------------------------------------------------------------------------------------------|
| <u>10.4. Conditions to avoid</u> | Incompatible products. Keep away from open flames, hot surfaces and sources of ignition. |
|----------------------------------|------------------------------------------------------------------------------------------|

|                                     |                          |
|-------------------------------------|--------------------------|
| <u>10.5. Incompatible materials</u> | Strong oxidizing agents. |
|-------------------------------------|--------------------------|

|                                               |                                                          |
|-----------------------------------------------|----------------------------------------------------------|
| <u>10.6. Hazardous decomposition products</u> | Carbon monoxide (CO). Carbon dioxide (CO <sub>2</sub> ). |
|-----------------------------------------------|----------------------------------------------------------|

## SECTION 11: TOXICOLOGICAL INFORMATION

### 11.1. Information on toxicological effects

#### Product Information

|                                        |                                                           |
|----------------------------------------|-----------------------------------------------------------|
| (a) acute toxicity;                    |                                                           |
| Oral                                   | Category 4                                                |
| Dermal                                 | Category 4                                                |
| Inhalation                             | Category 4                                                |
| (b) skin corrosion/irritation;         | Category 2                                                |
| (c) serious eye damage/irritation;     | Category 2                                                |
| (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;              | Category 3                                                |

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|                                            |                                                                                     |
|--------------------------------------------|-------------------------------------------------------------------------------------|
| Results / Target organs                    | Respiratory system.                                                                 |
| (i) STOT-repeated exposure;                | No data available                                                                   |
| Target Organs                              | None known.                                                                         |
| (j) aspiration hazard;                     | No data available                                                                   |
| Symptoms / effects, both acute and delayed | Symptoms of overexposure may be headache, dizziness, tiredness, nausea and vomiting |

## 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

#### Persistence

Insoluble in water, May persist, based on information available.

### 12.3. Bioaccumulative potential

May have some potential to bioaccumulate

### 12.4. Mobility in soil

Spillage unlikely to penetrate soil The product evaporates slowly Is not likely mobile in the environment due its low water solubility. Spillage unlikely to penetrate soil

### 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.

#### 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 empty into drains.

## SECTION 14: TRANSPORT INFORMATION

### IMDG/IMO

Not regulated

### 14.1. UN number

### 14.2. UN proper shipping name

### 14.3. Transport hazard class(es)

### 14.4. Packing group

### ADR

Not regulated

### 14.1. UN number

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14.2. UN proper shipping name  
14.3. Transport hazard class(es)  
14.4. Packing group

IATA Not regulated

14.1. UN number  
14.2. UN proper shipping name  
14.3. Transport hazard class(es)  
14.4. Packing group

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 |
|------------------------|-----------|--------|-----|------|-----|------|-------|------|-------|------|------|
| 4-Octanone, 5-hydroxy- | 207-830-4 | -      |     | -    | X   | -    | X     | X    | -     | X    | X    |

### 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

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

H302 - Harmful if swallowed  
H312 - Harmful in contact with skin  
H332 - Harmful if inhaled  
H315 - Causes skin irritation  
H319 - Causes serious eye irritation  
H335 - May cause respiratory irritation

### 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

**TWA** - Time Weighted Average

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

**PNEC** - Predicted No Effect Concentration

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**RPE** - Respiratory Protective Equipment  
**LC50** - Lethal Concentration 50%  
**NOEC** - No Observed Effect Concentration  
**PBT** - Persistent, Bioaccumulative, Toxic

**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.

**Creation Date** 11-Jul-2016

**Revision Date** 11-Jul-2016

**Revision Summary** Initial Release.

**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**