

Creation Date 04-Jun-2010

Revision Date 05-Sep-2014

Revision Number 3

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

### 1.1. Product identifier

**Product Description:** Chromium hexacarbonyl  
**Cat No. :** 221050000; 221050010; 221050100  
**Synonyms** Chromium carbonyl (OC-6-11).  
**CAS-No** 13007-92-6  
**EC-No.** 235-852-4  
**Molecular Formula** C6 Cr O6

### 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 Pharmaceuticaaan 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

Based on available data, the classification criteria are not met

##### Health hazards

|                                             |             |
|---------------------------------------------|-------------|
| Acute oral toxicity                         | Category 4  |
| Acute dermal toxicity                       | Category 4  |
| Acute Inhalation Toxicity - Dusts and Mists | Category 4  |
| Skin Sensitization                          | Category 1  |
| Carcinogenicity                             | Category 1A |

##### Environmental hazards

|                          |            |
|--------------------------|------------|
| Acute aquatic toxicity   | Category 1 |
| Chronic aquatic toxicity | Category 1 |

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

**Symbol(s)** T - Toxic  
 N - Dangerous for the environment

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## R-phrases(s)

R49 - May cause cancer by inhalation  
R43 - May cause sensitization by skin contact  
R44 - Risk of explosion if heated under confinement  
R20/21/22 - Harmful by inhalation, in contact with skin and if swallowed  
R50/53 - Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment

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

H302 - Harmful if swallowed  
H312 - Harmful in contact with skin  
H332 - Harmful if inhaled  
H317 - May cause an allergic skin reaction  
H350i - May cause cancer by inhalation  
H410 - Very toxic to aquatic life with long lasting effects  
EUH044 - Risk of explosion if heated under confinement

## Precautionary Statements

P201 - Obtain special instructions before use  
P280 - Wear protective gloves/ protective clothing/ eye protection/ face protection  
P302 + P352 - IF ON SKIN: Wash with plenty of soap and water  
P308 + P313 - IF exposed or concerned: Get medical advice/ attention  
P273 - Avoid release to the environment  
P304 + P340 - IF INHALED: Remove to fresh air and keep at rest in a position comfortable for breathing

## Additional EU labelling

Restricted to professional users

## 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                               |
|-------------------|------------|-------------------|----------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------|
| Chromium carbonyl | 13007-92-6 | EEC No. 235-852-4 | > 99     | Acute Tox. 4 (H302)<br>Acute Tox. 4 (H312)<br>Skin Sens. 1 (H317)<br>Acute Tox. 4 (H332)<br>Carc. 1A (H350i)<br>Aquatic Acute 1 (H400)<br>Aquatic Chronic 1 (H410)<br>(EUH044) | Carc. Cat. 1; R49<br>Xn; R20/21/22<br>R43<br>R44<br>N; R50/53 |

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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

|                                   |                                                                                                                                                                     |
|-----------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Eye Contact</b>                | Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Obtain medical attention.                                                  |
| <b>Skin Contact</b>               | Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Obtain medical attention.                                     |
| <b>Ingestion</b>                  | Clean mouth with water. Get medical attention.                                                                                                                      |
| <b>Inhalation</b>                 | Remove from exposure, lie down. Move to fresh air. If breathing is difficult, give oxygen. If not breathing, give artificial respiration. Obtain medical attention. |
| <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

May cause allergic skin reaction. . Symptoms of allergic reaction may include rash, itching, swelling, trouble breathing, tingling of the hands and feet, dizziness, lightheadedness, chest pain, muscle pain or flushing

### 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**

Water spray. Carbon dioxide (CO<sub>2</sub>). Dry chemical. chemical foam. 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

Do not allow run-off from fire fighting to enter drains or water courses.

#### **Hazardous Combustion Products**

None under normal use conditions.

### 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.

### 6.2. Environmental precautions

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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.

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

Sweep up or vacuum up spillage and collect in suitable container for disposal. Do not let this chemical enter the environment.

## **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**

Avoid contact with skin and eyes. Do not breathe dust. Do not ingest.

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

Keep in a dry, cool and well-ventilated place. Keep container tightly closed.

### **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

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<br>Dermal<br>Inhalation |                              |                                 |                                |                                   |

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

## 8.2. Exposure controls

### Engineering Measures

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

### 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 | See manufacturers | -               | EN 374      | (minimum requirement) |
| Nitrile rubber | recommendations   |                 |             |                       |
| Neoprene       |                   |                 |             |                       |
| PVC            |                   |                 |             |                       |

**Skin and body protection** Wear appropriate protective gloves and clothing to prevent skin exposure

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:** 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** 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

**Appearance** White  
**Physical State** Powder Solid  
**Odor** No information available  
**Odor Threshold** No data available

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|                                         |                          |                                          |
|-----------------------------------------|--------------------------|------------------------------------------|
| pH                                      | No information available |                                          |
| Melting Point/Range                     | 150 °C / 302 °F          |                                          |
| Softening Point                         | No data available        |                                          |
| Boiling Point/Range                     | 220 °C / 428 °F          |                                          |
| Flash Point                             | No information available | <b>Method -</b> No information available |
| Evaporation Rate                        | Not applicable           | Solid                                    |
| Flammability (solid,gas)                | No information available |                                          |
| Explosion Limits                        | No data available        |                                          |
| Vapor Pressure                          | 0.35 mbar @ 20 °C        |                                          |
| Vapor Density                           | Not applicable           | Solid                                    |
| Specific Gravity / Density              | No data available        |                                          |
| Bulk Density                            | No data available        |                                          |
| Water Solubility                        | Insoluble                |                                          |
| Solubility in other solvents            | No information available |                                          |
| Partition Coefficient (n-octanol/water) |                          |                                          |
| Autoignition Temperature                | Not applicable           |                                          |
| Decomposition temperature               | 210 °C                   |                                          |
| Viscosity                               | Not applicable           | Solid                                    |
| Explosive Properties                    | No information available |                                          |
| Oxidizing Properties                    | No information available |                                          |

## 9.2. Other information

|                   |          |
|-------------------|----------|
| Molecular Formula | C6 Cr O6 |
| Molecular Weight  | 220.06   |

## SECTION 10: STABILITY AND REACTIVITY

### 10.1. Reactivity

Yes

### 10.2. Chemical stability

Risk of explosion if heated under confinement: heat sensitive: Light sensitive

### 10.3. Possibility of hazardous reactions

|                          |                                          |
|--------------------------|------------------------------------------|
| Hazardous Polymerization | Hazardous polymerization does not occur. |
| Hazardous Reactions      | No information available.                |

### 10.4. Conditions to avoid

Excess heat. Exposure to light. Incompatible products.

### 10.5. Incompatible materials

Strong oxidizing agents. Halogens.

### 10.6. Hazardous decomposition products

None under normal use conditions.

## SECTION 11: TOXICOLOGICAL INFORMATION

### 11.1. Information on toxicological effects

#### Product Information

|                     |            |
|---------------------|------------|
| (a) acute toxicity; |            |
| Oral                | Category 4 |
| Dermal              | Category 4 |
| Inhalation          | Category 4 |

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|                                            |                                                                                                                                                                                       |
|--------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| (b) skin corrosion/irritation;             | No data available                                                                                                                                                                     |
| (c) serious eye damage/irritation;         | No data available                                                                                                                                                                     |
| (d) respiratory or skin sensitization;     |                                                                                                                                                                                       |
| Respiratory                                | No data available                                                                                                                                                                     |
| Skin                                       | Category 1                                                                                                                                                                            |
|                                            | No information available                                                                                                                                                              |
| (e) germ cell mutagenicity;                | No data available                                                                                                                                                                     |
| (f) carcinogenicity;                       | Category 1A                                                                                                                                                                           |
|                                            | 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. See actual entry in RTECS for complete information                                                                     |
| Symptoms / effects, both acute and delayed | Symptoms of allergic reaction may include rash, itching, swelling, trouble breathing, tingling of the hands and feet, dizziness, lightheadedness, chest pain, muscle pain or flushing |

## 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.

### 12.2. Persistence and degradability

#### Persistence

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

#### Degradability

Not relevant for inorganic substances.

#### Degradation in sewage treatment plant

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

### 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

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## SECTION 13: DISPOSAL CONSIDERATIONS

### 13.1. Waste treatment methods

|                                              |                                                                                                                                                                                                                     |
|----------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Waste from Residues / Unused Products</b> | 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. |
| <b>Contaminated Packaging</b>                | Dispose of this container to hazardous or special waste collection point.                                                                                                                                           |
| <b>European Waste Catalogue (EWC)</b>        | According to the European Waste Catalogue, Waste Codes are not product specific, but application specific.                                                                                                          |
| <b>Other Information</b>                     | 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

### IMDG/IMO

|                                         |                               |
|-----------------------------------------|-------------------------------|
| <b>14.1. UN number</b>                  | UN3466                        |
| <b>14.2. UN proper shipping name</b>    | METAL CARBONYLS, SOLID, N.O.S |
| <b>14.3. Transport hazard class(es)</b> | 6.1                           |
| <b>14.4. Packing group</b>              | III                           |

### ADR

|                                         |                               |
|-----------------------------------------|-------------------------------|
| <b>14.1. UN number</b>                  | UN3466                        |
| <b>14.2. UN proper shipping name</b>    | METAL CARBONYLS, SOLID, N.O.S |
| <b>14.3. Transport hazard class(es)</b> | 6.1                           |
| <b>14.4. Packing group</b>              | III                           |

### IATA

|                                         |                               |
|-----------------------------------------|-------------------------------|
| <b>14.1. UN number</b>                  | UN3466                        |
| <b>14.2. UN proper shipping name</b>    | METAL CARBONYLS, SOLID, N.O.S |
| <b>14.3. Transport hazard class(es)</b> | 6.1                           |
| <b>14.4. Packing group</b>              | III                           |

|                                    |                                                                                                          |
|------------------------------------|----------------------------------------------------------------------------------------------------------|
| <b>14.5. Environmental hazards</b> | Dangerous for the environment<br>Product is a marine pollutant according to the criteria set by IMDG/IMO |
|------------------------------------|----------------------------------------------------------------------------------------------------------|

|                                           |                                 |
|-------------------------------------------|---------------------------------|
| <b>14.6. Special precautions for user</b> | No special precautions required |
|-------------------------------------------|---------------------------------|

|                                                                                      |                                |
|--------------------------------------------------------------------------------------|--------------------------------|
| <b>14.7. Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code</b> | 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 |
|-------------------|-----------|--------|-----|------|-----|------|-------|------|-------|------|------|
| Chromium carbonyl | 235-852-4 | -      |     | X    | -   | X    | X     | -    | X     | X    | X    |

National Regulations

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Take note of Control of Substances Hazardous to Health Regulations (COSHH) 2002 and 2005 Amendment.  
Take note of Dir 76/769/EEC relating to restrictions on the marketing and use of certain dangerous substances and preparations  
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 R-phrases referred to under sections 2 and 3

R49 - May cause cancer by inhalation  
R43 - May cause sensitization by skin contact  
R44 - Risk of explosion if heated under confinement  
R20/21/22 - Harmful by inhalation, in contact with skin and if swallowed  
R50/53 - Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment

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

H302 - Harmful if swallowed  
H312 - Harmful in contact with skin  
H317 - May cause an allergic skin reaction  
H332 - Harmful if inhaled  
H350i - May cause cancer by inhalation  
H400 - Very toxic to aquatic life  
H410 - Very toxic to aquatic life with long lasting effects  
EUH044 - Risk of explosion if heated under confinement

### 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

**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

**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

**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

**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

**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

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## 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.

Chemical incident response training.

|                  |                   |
|------------------|-------------------|
| Creation Date    | 04-Jun-2010       |
| Revision Date    | 05-Sep-2014       |
| Revision Summary | Update to Format. |

**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**