



# SAFETY DATA SHEET

Creation Date 13-Sep-2013

Revision Date 13-Sep-2013

Revision Number 1

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

### 1.1. Product identifier

Product Description:	<b>Chromium</b>
Cat No. :	<b>225490000; 225491000; 225495000; 225490025</b>
Synonyms	Chrome
CAS-No	7440-47-3
EC-No.	231-157-5
Molecular Formula	Cr

### 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

Based on available data, the classification criteria are not met

##### Environmental hazards

Acute aquatic toxicity

Category 1

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

Symbol(s)	N - Dangerous for the environment
R-phrase(s)	R50 - Very toxic to aquatic organisms

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

### 2.2. Label elements

**Signal Word****Warning****Hazard Statements**

H400 - Very toxic to aquatic life

**Precautionary Statements**

P273 - Avoid release to the environment

P391 - Collect spillage

P501 - Dispose of contents/ container to an approved waste disposal plant

**2.3. Other hazards**

No information available.

### SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Component	CAS-No	EC-No.	Weight %	CLP Classification - Regulation (EC) No 1272/2008	DSD Classification - 67/548/EEC
Chromium	7440-47-3	EEC No. 231-157-5	>95	Aquatic Acute 1 (H400)	N; R50

*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**

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. Obtain medical attention.

**Ingestion**

Clean mouth with water and drink afterwards plenty of water. Get medical attention if symptoms occur.

**Inhalation**

Move to fresh air. If breathing is difficult, give oxygen. Obtain medical attention.

**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**

None reasonably foreseeable.

**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 extinguishing measures that are appropriate to local circumstances and the surrounding environment

**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. Use personal protective equipment. Avoid dust formation.

**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.

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

Sweep up or vacuum up spillage and collect in suitable container for disposal. Keep in suitable, closed containers for disposal.

**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**

Wear personal protective equipment. Ensure adequate ventilation. Do not get in eyes, on skin, or on clothing. Avoid ingestion and inhalation. Avoid dust formation.

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

Keep containers tightly closed in a dry, cool and well-ventilated place. Store under an inert atmosphere.

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

Use in laboratories

**SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION****8.1. Control parameters**

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### Exposure limits

List source(s):

**EU** - Commission Directive 2006/15/EC of 7 February 2006 establishing a second list of indicative occupational exposure limit values in implementation of Council Directive 98/24/EC and amending Directives 91/322/EEC and 2000/39/EC on the protection of the health and safety of workers from the risks related to chemical agents at work.

**UK** - EH40/2005 Containing the workplace exposure limits (WELs) for use with the Control of Substances Hazardous to Health Regulations (COSHH) 2002 (as amended). Updated by September 2006 official press release and October 2007 Supplement.

**IRE** - 2010 Code of Practice for the Safety, Health and Welfare at Work (Chemical Agents) Regulations 2001. Published by the Health and Safety Authority.

Component	European Union	The United Kingdom	France	Belgium	Spain
Chromium	TWA: 2 mg/m <sup>3</sup> 8 hr	STEL: 1.5 mg/m <sup>3</sup> 15 min TWA: 0.5 mg/m <sup>3</sup> 8 hr	TWA / VME: 2 mg/m <sup>3</sup> (8 heures), indicative limit	TWA: 0.5 mg/m <sup>3</sup> 8 uren	TWA / VLA-ED: 2 mg/m <sup>3</sup> (8 horas)

Component	Italy	Germany	Portugal	The Netherlands	Finland
Chromium	TWA: 0.5 mg/m <sup>3</sup> 8 ore.	TWA: 2 mg/m <sup>3</sup> (8 Stunden). AGW - exposure factor 1	TWA: 0.5 mg/m <sup>3</sup> 8 horas	TWA: 0.5 mg/m <sup>3</sup> 8 uren	TWA: 0.5 mg/m <sup>3</sup> 8 tunteina

Component	Austria	Denmark	Switzerland	Poland	Norway
Chromium	TWA: 2 mg/m <sup>3</sup> 8 Stunden	TWA: 0.5 mg/m <sup>3</sup> 8 timer	MAK: 0.5 mg/m <sup>3</sup> 8 Stunden	TWA: 0.5 mg/m <sup>3</sup> 8 godzinach	TWA: 0.5 mg/m <sup>3</sup> 8 timer STEL: 1.5 mg/m <sup>3</sup> 15 minutter.

Component	Bulgaria	Croatia	Ireland	Cyprus	Czech Republic
Chromium	TWA: 2.0 mg/m <sup>3</sup>	TWA: 2 mg/m <sup>3</sup> 8 satima. Cr	TWA: 2 mg/m <sup>3</sup> 8 hr.	TWA: 2 mg/m <sup>3</sup>	TWA: 0.5 mg/m <sup>3</sup> 8 hodinách. dust Ceiling: 1.5 mg/m <sup>3</sup>

Component	Estonia	Gibraltar	Greece	Hungary	Iceland
Chromium	TWA: 2 mg/m <sup>3</sup> 8 tundides.	TWA: 2 mg/m <sup>3</sup> 8 hr	TWA: 1 mg/m <sup>3</sup>	STEL: 2 mg/m <sup>3</sup> 15 percekben. TWA: 2 mg/m <sup>3</sup> 8 órában.	TWA: 0.5 mg/m <sup>3</sup> 8 klukkustundum. powder Ceiling: 1 mg/m <sup>3</sup> powder

Component	Latvia	Lithuania	Luxembourg	Malta	Romania
Chromium	TWA: 0.5 mg/m <sup>3</sup> TWA: 2 mg/m <sup>3</sup>	TWA: 2 mg/m <sup>3</sup>	TWA: 2 mg/m <sup>3</sup> 8 Stunden	TWA: 2 mg/m <sup>3</sup>	TWA: 0.05 mg/m <sup>3</sup> 8 ore TWA: 2 mg/m <sup>3</sup> 8 ore

Component	Russia	Slovak Republic	Slovenia	Sweden	Turkey
Chromium				LLV: 0.005 mg/m <sup>3</sup> 8 timmar. total dust	TWA: 2 mg/m <sup>3</sup> 8 saat

### Biological limit values

List source(s):

Component	European Union	United Kingdom	France	Spain	Germany
Chromium			Total Chromium: 0.01 mg/g creatinine urine Total Chromium: 0.03 mg/g creatinine urine end of shift at end of workweek		

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Component	Italy	Finland	Denmark	Bulgaria	Romania
Chromium					Chrome: 10 µg/g creatinine urine during working hours Chrome: 30 µg/g creatinine urine end of work week

Component	Gibraltar	Latvia	Slovak Republic	Luxembourg	Turkey
Chromium		Chromium: 10 µg/g creatinine urine change of shift			

### 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

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

Safety glasses with side-shields (European standard - EN 166)

##### Hand Protection

Protective gloves

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

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.

##### Skin and body protection

Long sleeved clothing

##### 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.

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<b>Large scale/emergency use</b>	Use a NIOSH/MSHA or European Standard EN 136 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced. <b>Recommended Filter type:</b> Particulates filter conforming to EN 143.
<b>Small scale/Laboratory use</b>	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. <b>Recommended half mask:-</b> Particle filtering: EN149:2001 When RPE is used a face piece Fit Test should be conducted.
<b>Hygiene Measures</b>	Handle in accordance with good industrial hygiene and safety practice.
<b>Environmental exposure controls</b>	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>	Silver	
<b>Physical State</b>	Powder.	
<b>Odor</b>	odorless	
<b>Odor Threshold</b>	No data available	
<b>pH</b>	No information available.	
<b>Melting Point/Range</b>	1857.2°C / 3375°F	
<b>Softening Point</b>	No data available	
<b>Boiling Point/Range</b>	2640°C / 4784°F	
<b>Flash Point</b>	Not applicable	<b>Method -</b> No information available.
<b>Evaporation Rate</b>	Not applicable	Solid
<b>Flammability (solid,gas)</b>	No information available.	
<b>Explosion Limits</b>	No data available.	
<b>Vapor Pressure</b>	No information available.	
<b>Vapor Density</b>	Not applicable	Solid
<b>Specific Gravity / Density</b>	7.2	
<b>Bulk Density</b>	No data available	
<b>Water Solubility</b>	Insoluble	
<b>Solubility in other solvents</b>	No information available.	
<b>Partition Coefficient (n-octanol/water)</b>		
<b>Autoignition Temperature</b>	Not applicable	
<b>Decomposition temperature</b>	No data available	
<b>Viscosity</b>	Not applicable	Solid
<b>Explosive Properties</b>	No information available.	
<b>Oxidizing Properties</b>	No information available.	

### 9.2. Other information

<b>Molecular Formula</b>	Cr
<b>Molecular Weight</b>	51.996

## SECTION 10: STABILITY AND REACTIVITY

<b>10.1. Reactivity</b>	None known, based on information available.
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## SECTION 10: STABILITY AND REACTIVITY

**10.2. Chemical stability**

Sensitive to air.

**10.3. Possibility of hazardous reactions****Hazardous Polymerization  
Hazardous Reactions**Hazardous polymerization does not occur.  
None under normal processing.**10.4. Conditions to avoid**

Incompatible products, Excess heat, Avoid dust formation.

**10.5. Incompatible materials**

Strong oxidizing agents. Strong acids.

**10.6. Hazardous decomposition products**

None under normal use conditions

## 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;**

No data available

**(c) serious eye damage/irritation;**

No data available

**(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

Eyes, Respiratory system, Skin.

**(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**

No information available.

## SECTION 12: ECOLOGICAL INFORMATION

### 12.1. Toxicity

#### Ecotoxicity effects

The product contains following substances which are hazardous for the environment. Very toxic to aquatic organisms.

Component	Freshwater Fish	Water Flea	Freshwater Algae	Microtox
Chromium	LC50: 14.3 mg/l/96 H (Pimephales promelas)	EC50: 0.07 mg/l/48 H		

### 12.2. Persistence and degradability

#### Persistence

Insoluble in water.

#### 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

Component	log Pow	Bioconcentration factor (BCF)
Chromium		1.03 - 1.22

### 12.4. Mobility in soil

No information available. Is not likely mobile in the environment due its low water solubility.

### 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

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

### IMDG/IMO

#### 14.1. UN number

UN3077

#### 14.2. UN proper shipping name

Environmentally hazardous substance, solid, n.o.s

#### 14.3. Transport hazard class(es)

9

#### 14.4. Packing group

III

### ADR

#### 14.1. UN number

UN3077

#### 14.2. UN proper shipping name

Environmentally hazardous substance, solid, n.o.s

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**14.3. Transport hazard class(es)** 9  
**14.4. Packing group** III

## IATA

**14.1. UN number** UN3077  
**14.2. UN proper shipping name** Environmentally hazardous substance, solid, n.o.s  
**14.3. Transport hazard class(es)** 9  
**14.4. Packing group** III  
**14.5. Environmental hazards** Dangerous for the environment  
Product is a marine pollutant according to the criteria set by IMDG/IMO  
**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	CHINA	AICS	KECL
Chromium	231-157-5	-		X	X	-	X	-	X	X	X

### National Regulations

Component	Germany - Water Classification (VwVws)	Germany - TA-Luft Class
Chromium	nwg - nicht wassergefährdend (non-hazardous to waters)	Class III : 5 g/h (Massenstrom) Class III : 1 mg/m <sup>3</sup> (Massenkonzentration)

Component	France - INRS (Tables of occupational diseases)
Chromium	Tableaux des maladies professionnelles (TMP) - RG 10

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 R-phrases referred to under sections 2 and 3

R50 - Very toxic to aquatic organisms

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

H400 - Very toxic to aquatic life

### Legend

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**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** - China Inventory of Existing Chemical Substances

**KECL** - Existing and Evaluated Chemical Substances

**WEL** - Workplace Exposure Limit

**ACGIH** - American Conference of Industrial Hygiene

**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** - Japan 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

### Training Advice

Chemical incident response training.

**Creation Date** 13-Sep-2013

**Revision Date** 13-Sep-2013

**Revision Summary**

**Reason for revision** 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**