

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

**Product Identifier**

<b>Product Description:</b>	<b>Hexacarbonylchromium</b>
<b>Cat No. :</b>	<b>13061</b>
<b>Synonyms</b>	Chromium carbonyl (OC-6-11).
<b>CAS No</b>	13007-92-6
<b>Molecular Formula</b>	C6 Cr O6

**Relevant identified uses of the substance or mixture and uses advised against**

<b>Recommended Use</b>	Laboratory chemicals.
<b>Uses advised against</b>	No Information available

**Details of the supplier of the safety data sheet**

<b>Importer</b>	<b>Supplier</b>
Fisher Scientific Korea	Thermo Fisher Scientific Chemicals, Inc.
D5,D6, Incheon Airport Logistics Complex	30 Bond Street
150, Gonghangdong-Ro 296 Beon-Gil	Ward Hill, MA 01835-8099
Jung-Gu, Incheon	
Tel: +82-1661-9555	
Fax: +82-2-2023-0603	

<b>E-mail address</b>	Chem.KR@thermofisher.com
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**Emergency Telephone Number**

Emergency telephone: Medical: +(82) 070-7686-0086 or + 1-703-741-5970  
 CHEMTREC: 080 822 1374 (Local), CHEMTREC: 1-800-424-9300 or + 1-703-527-3887  
 Korea: 00-308-13-2549 (24 hours a day, 7 days a week)

## SECTION 2: HAZARDS IDENTIFICATION

**Classification of the substance or mixture**
**Physical hazards**

Based on available data, the classification criteria are not met

**Health hazards**

Acute Oral Toxicity	Category 3
Skin Sensitization	Category 1
Carcinogenicity	Category 1

**Environmental hazards**

Acute aquatic toxicity	Category 1
Chronic aquatic toxicity	Category 1

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## Label Elements



Signal Word

Danger

### Hazard Statements

H301 - Toxic if swallowed

H317 - May cause an allergic skin reaction

H350 - May cause cancer

H410 - Very toxic to aquatic life with long lasting effects

H400 - Very toxic to aquatic life

### Precautionary Statements

#### Prevention

P264 - Wash hands and face thoroughly after handling

P270 - Do not eat, drink or smoke when using this product

P261 - Avoid breathing dust/fume/gas/mist/vapors/spray

P272 - Contaminated work clothing should not be allowed out of the workplace

P201 - Obtain special instructions before use

P202 - Do not handle until all safety precautions have been read and understood

P280 - Wear protective gloves/protective clothing/eye protection/face protection

P273 - Avoid release to the environment

#### Response

P301 + P310 - IF SWALLOWED: Immediately call a POISON CENTER or doctor

P330 - Rinse mouth

P321 - Specific treatment (see supplemental first aid instructions on this label)

P302 + P352 - IF ON SKIN: Wash with plenty of soap and water

P333 + P313 - If skin irritation or rash occurs: Get medical advice/attention

P362 + P364 - Take off contaminated clothing and wash it before reuse

P308 + P313 - IF exposed or concerned: Get medical advice/attention

P391 - Collect spillage

#### Storage

P405 - Store locked up

#### Disposal

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

## Other Hazards

This product does not contain any known or suspected endocrine disruptors  
Toxic to terrestrial vertebrates

## NFPA

Health  
3

Flammability  
0

Instability  
3

Physical hazards  
N/A

## SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

### 3.1. Substances

Component	Common Name	CAS No	Index No	Weight %
Chromium carbonyl	Chromium carbonyl	13007-92-6	KE-05990	99 - 100

ALFAA13061

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	(OC-6-11).			
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## SECTION 4: FIRST AID MEASURES

### Description of first aid measures

#### General Advice

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

#### Eye Contact

In the case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

#### Skin Contact

Wash off immediately with plenty of water for at least 15 minutes. Immediate medical attention is required.

#### Ingestion

Do NOT induce vomiting. Call a physician or poison control center immediately.

#### Inhalation

Remove to fresh air. If not breathing, give artificial respiration. Do not use mouth-to-mouth method if victim ingested or inhaled the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. Immediate medical attention is required.

#### Self-Protection of the First Aider

Ensure that medical personnel are aware of the material(s) involved, take precautions to protect themselves and prevent spread of contamination.

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

None reasonably foreseeable. 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.

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

#### Notes to Physician

Treat symptomatically.

## SECTION 5: FIREFIGHTING MEASURES

### Extinguishing media

#### Suitable Extinguishing Media

Water spray. Carbon dioxide (CO<sub>2</sub>). Dry chemical. Chemical foam. Water mist may be used to cool closed containers.

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

No information available.

### 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.

### Advice for fire-fighters

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

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## Personal Precautions, Protective Equipment and Emergency Procedures

Ensure adequate ventilation. Use personal protective equipment as required. Avoid dust formation. Keep people away from and upwind of spill/leak. Evacuate personnel to safe areas.

## 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.

## Methods and Material for Containment and Cleaning Up

Sweep up and shovel into suitable containers for disposal. Avoid dust formation.

## Reference to Other Sections

Refer to protective measures listed in Sections 8 and 13.

## SECTION 7: HANDLING AND STORAGE

### Precautions for Safe Handling

Wear personal protective equipment/face protection. Do not get in eyes, on skin, or on clothing. Avoid dust formation. Use only under a chemical fume hood. Do not breathe (dust, vapor, mist, gas). Do not ingest. If swallowed then seek immediate medical assistance.

### Conditions for Safe Storage, Including any Incompatibilities

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

### Specific End Uses

Use in laboratories.

## SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

### Control Parameters

Component	CAS No	Korea	ACGIH TLV	OSHA PEL
Chromium carbonyl	13007-92-6	Not listed	Not listed	Not listed

Component	CAS No	European Union	The United Kingdom	Germany
Chromium carbonyl	13007-92-6	Not listed	Not listed	Not listed

### ACGIH - Biological Exposure Indices

Component	CAS No	ACGIH - Biological Exposure Indices
Chromium carbonyl	13007-92-6	Not listed

### 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

##### Hand Protection

Protective gloves

##### Skin and body protection

Wear appropriate protective gloves and clothing to prevent skin exposure

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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.

## Personal protective equipment

### Respiratory Protection

### Recommended Filter type:

Use only those certified by the Korea Occupational Safety and Health Administration.

When workers are facing concentrations above the exposure limit they must use appropriate certified respirators

Particulates filter conforming to EN 143

To protect the wearer, respiratory protective equipment must be the correct fit and be used and maintained properly

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

### Information on basic physical and chemical properties

Appearance (Physical State, Color, etc.) White Powder Solid

Odor No information available

Odor Threshold No data available

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

Method - 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)

Component	CAS No	log Pow
Chromium carbonyl	13007-92-6	No data available

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Autoignition Temperature	No data available	
Decomposition Temperature	210 °C	
Viscosity	Not applicable	Solid
Explosive Properties	No information available	
Oxidizing Properties	No information available	

Molecular Formula	C6 Cr O6
Molecular Weight	220.06

## SECTION 10: STABILITY AND REACTIVITY

Reactivity Yes

Chemical Stability Risk of explosion if heated under confinement. heat sensitive. Light sensitive.

### Possibility of Hazardous Reactions

Hazardous Polymerization	Hazardous polymerization does not occur.
Hazardous Reactions	None under normal processing.

Conditions to Avoid Excess heat. Exposure to light. Incompatible products.

Incompatible Materials Strong oxidizing agents. Halogens.

Hazardous Decomposition Products None under normal use conditions.

## SECTION 11: TOXICOLOGICAL INFORMATION

### 11.1. Information on hazard classes as defined in Regulation (EC) No 1272/2008

#### Product Information

#### Information on expected route of exposure

Inhalation	May produce an allergic reaction. Avoid breathing dust or spray mist. May be harmful if inhaled.
Ingestion	May cause allergic reaction. May be harmful if swallowed.
Eyes	Avoid contact with eyes. Sensitization.
Skin	Avoid contact with skin. Repeated or prolonged skin contact may cause allergic reactions with susceptible persons.

#### Information on Health Hazards

(a) acute toxicity;	.
Oral	Category 3
Dermal	No data available
Inhalation	No data available

Component	CAS No	LD50 Oral	LD50 Dermal	LC50 Inhalation
Chromium carbonyl	13007-92-6	LD50 = 230 mg/kg ( Rat	No data available	No data available

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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

Component	CAS No	Test method	Test species	Study result
Chromium carbonyl	13007-92-6	No data available	No data available	No data available

No information available

(e) germ cell mutagenicity; No data available

Component	CAS No	Test method	Test species	Study result
Chromium carbonyl	13007-92-6	No data available	No data available	No data available

(f) carcinogenicity; Category 1

Component	CAS No	Test method	Test species / Duration	Study result
Chromium carbonyl	13007-92-6	No data available	No data available	No data available

There are no known carcinogenic chemicals in this product

Component	CAS No	IARC	NTP	ACGIH	OSHA	UK
Chromium carbonyl	13007-92-6	Not listed	Not listed	Not listed	Not listed	Not listed

(g) reproductive toxicity; No data available

Component	CAS No	Test method	Test species / Duration	Study result
Chromium carbonyl	13007-92-6	No data available	No data available	No data available

(h) STOT-single exposure; No data available

(i) STOT-repeated exposure; No data available

Target Organs None known.

(j) aspiration hazard; Not applicable  
Solid

## Other Adverse Effects

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.

Component	CAS No	EU - Endocrine Disruptors Candidate List	EU - Endocrine Disruptors - Evaluated Substances	Japan - Endocrine Disruptor Information
Chromium carbonyl	13007-92-6	Not applicable	Not applicable	Not applicable

## SECTION 12: ECOLOGICAL INFORMATION

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## Ecotoxicity effects

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

Component	CAS No	Freshwater Fish	Water Flea	Freshwater Algae	Microtox
Chromium carbonyl	13007-92-6	No data available	No data available	No data available	No data available

## 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.

## Bioaccumulative potential

May have some potential to bioaccumulate

## 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.

## Ozone Depletion Potential

Component	CAS No	Ozone Depletion Potential
Chromium carbonyl	13007-92-6	Not listed

## Other adverse effects

No information available

## SECTION 13: DISPOSAL CONSIDERATIONS

## Waste treatment methods

### **Waste from Residues/Unused Products**

Waste is classified as hazardous. Dispose in accordance with the Wastes Control Act (폐기물관리법).

### **Contaminated Packaging**

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

### **Other Information**

Do not flush to 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

## Road and Rail Transport

### **UN-No**

UN3466

### **Proper Shipping Name**

METAL CARBONYLS, SOLID, N.O.S.

### **Technical Shipping Name**

Chromium carbonyl

### **Hazard Class**

6.1

### **Packing Group**

III

## IATA

### **UN-No**

UN3466

### **Proper Shipping Name**

METAL CARBONYLS, SOLID, N.O.S.

### **Technical Shipping Name**

Chromium carbonyl

### **Hazard Class**

6.1

### **Packing Group**

III

## IMDG/IMO

### **UN-No**

UN3466

### **Proper Shipping Name**

METAL CARBONYLS, SOLID, N.O.S.

### **Technical Shipping Name**

Chromium carbonyl

ALFAA13061



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**Hazard Class** 6.1  
**Packing Group** III  
**Marine Pollutant** Dangerous for the environment  
 Product is a marine pollutant according to the criteria set by IMDG/IMO

**Special Precautions for User** No special precautions required

## SECTION 15: REGULATORY INFORMATION

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

**Legend:** X - Listed '-' - Not Listed

#### International Inventories

Component	CAS No	KECL	TSCA	EINECS	IECSC	DSL	NDSL	PICCS	ENCS	ISHL	AICS
Chromium carbonyl	13007-92-6	KE-05990	X	235-852-4	X	-	X	X	-		X

Component	CAS No	Seveso III Directive (2012/18/EC) - Qualifying Quantities for Major Accident Notification	Seveso III Directive (2012/18/EC) - Qualifying Quantities for Safety Report Requirements	Rotterdam Convention (PIC)	Basel Convention (Hazardous Waste)
Chromium carbonyl	13007-92-6	Not applicable	Not applicable	Not applicable	Not applicable

Component	CAS No	OECD HPV	Persistent Organic Pollutant	Ozone Depletion Potential
Chromium carbonyl	13007-92-6	Not applicable	Not applicable	Not applicable

#### Korean National Regulations

Component	CAS No	Act on Registration and Evaluation of Chemical Substances (K-REACH)	Authorised Chemicals	Existing Substances Subject to Registration
Chromium carbonyl	13007-92-6	Annex 1 - KE-05990	Not applicable	Not applicable

Component	CAS No	Chemical Control Act - Toxic Chemicals	Chemical Control Act - Prohibited Chemicals	Chemical Control Act - Use Restricted Chemicals
Chromium carbonyl	13007-92-6	Not applicable	Not applicable	Not applicable

Component	CAS No	Chemical Control Act - Accident Precaution Chemicals (% in mixtures)	Chemical Control Act - Accident Precaution Chemicals - Quantity limits Storage (% in mixtures)	Chemical Control Act - Accident Precaution Chemicals - Quantity limits Manufacture/Use (% in mixtures)
Chromium carbonyl	13007-92-6	Not applicable	Not applicable	Not applicable

Component	CAS No	Waste Control Law	Ministry of Environment - CMR risk	Ministry of Environment - Critically Controlled Substance
Chromium carbonyl	13007-92-6	Not applicable	Not applicable	Not applicable

Component	CAS No	ISHA - Harmful Agents Subject to Work Environment Monitoring	ISHA - Prohibited substances	ISHA - Substances requiring permission
Chromium carbonyl	13007-92-6	Not applicable	Not applicable	Not applicable

Component	CAS No	ISHA - Substances	ISHA - Harmful Agents	ISHA - Permissible
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		subject to control	Requiring Health Examination	Exposure Limits
Chromium carbonyl	13007-92-6	Listed	Listed	Not applicable

Component	CAS No	ISHA - Subject to Process Safety Reports (minimum quantity)	ISHA - Threshold Limit Values (TLVs) Chemicals	ISHA - Special management materials
Chromium carbonyl	13007-92-6	Not applicable	Not applicable	Not applicable

**National Fire Association - Dangerous Substances** Minimum quantity requiring a permit

Component	CAS No	Class 1 - Oxidising solids	Class 2 - Flammable solid	Class 3 - Spontaneously Combustible Substances and Dangerous Substances When Wet	Class 4 - Flammable liquids	Class 5 - Self-reactive substances	Class 6 - Oxidising liquids
Chromium carbonyl	13007-92-6	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable

## Control Parameters

Component	CAS No	Korea	ACGIH - Biological Exposure Indices
Chromium carbonyl	13007-92-6	Not listed	Not listed

## US Management Information

OSHA - Occupational Safety and Health Administration

Not applicable

Component	CAS No	Specifically Regulated Chemicals	Highly Hazardous Chemicals
Chromium carbonyl	13007-92-6	Not applicable	Not applicable

**CERCLA** Not applicable

Component	CAS No	CERCLA Extremely Hazardous Substances RQs	Hazardous Substances RQs	SARA 313 - Threshold Values %
Chromium carbonyl	13007-92-6	Not applicable	Not applicable	Not applicable

## GHS Classification - According to GB-CLP Regulations UK SI 2019/720 and UK SI 2020/1567

Danger.

H301 - Toxic if swallowed. H317 - May cause an allergic skin reaction. H350i - May cause cancer by inhalation. H410 - Very toxic to aquatic life with long lasting effects.

P201 - Obtain special instructions before use. 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. P308 + P313 - IF exposed or concerned: Get medical advice/attention. P405 - Store locked up.

## SECTION 16: OTHER INFORMATION

### 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

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

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

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

**AICS** - Australian Inventory of Chemical Substances

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KECL - Korean Existing and Evaluated Chemical Substances

NZIoC - New Zealand Inventory of Chemicals

WEL - Workplace Exposure Limit

ACGIH - American Conference of Governmental Industrial Hygienists

RPE - Respiratory Protective Equipment

LC50 - Lethal Concentration 50%

POW - Partition coefficient Octanol:Water

TWA - Time Weighted Average

IARC - International Agency for Research on Cancer

LD50 - Lethal Dose 50%

EC50 - Effective Concentration 50%

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 Compound)

## Key literature references and sources for data

<https://echa.europa.eu/information-on-chemicals>

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.

Chemical incident response training.

## Prepared By

Health, Safety and Environmental Department

## Creation Date

04-Jun-2010

## Revision Date

09-Jun-2024

## Revision Number

6

## Revision Summary

New emergency telephone response service provider.

## MOEL's Public Notice No. 2023-9 (Standards for Classification and Labeling of Chemical Substances and Safety Data Sheets)

### 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**