Material Safety Data Sheet
Dicobalt octacarbonyl

ACC# 56919

Section 1 - Chemical Product and Company Identification

MSDS Name: Dicobalt octacarbonyl
Catalog Numbers: AC291840000, AC291840050, AC291840250
Synonyms: Cobalt carbonyl; Cobalt tetracarbonyl dimer.
Company Identification:

Acros Organics N.V.
One Reagent Lane
Fair Lawn, NJ 07410

For information in North America, call: 800-ACROS-01
For emergencies in the US, call CHEMTREC: 800-424-9300

Section 2 - Composition, Information on Ingredients

CAS#	Chemical Name	Percent	EINECS/ELINCS
10210-68-1	Cobalt carbonyl	95	233-514-0
110-54-3	Hexane	5	203-777-6

Section 3 - Hazards Identification

EMERGENCY OVERVIEW

Appearance: dark orange solid.
Danger! Pyrophoric. Spontaneously flammable in air. May be pyrophoric and become spontaneously flammable in air. May cause allergic respiratory and skin reaction. May be harmful if swallowed. Air sensitive.
Target Organs: Lungs, skin.

Potential Health Effects

Eye: May cause eye irritation.
Skin: May cause skin irritation. May cause skin sensitization, an allergic reaction, which becomes evident upon re-exposure to this material.
Ingestion: May cause gastrointestinal irritation with nausea, vomiting and diarrhea. May be harmful if swallowed.
Inhalation: May cause respiratory tract irritation. Inhalation of fumes may cause metal fume fever, which is characterized by flu-like symptoms with metallic taste, fever, chills, cough, weakness, chest pain, muscle pain and increased white blood cell count. In rare instances, exposure may cause sensitization, resulting in inflammation of the mucous membranes and in eczematous eruptions.
Chronic: May cause kidney injury. Cobalt compounds may cause cancer based upon animal studies.

Section 4 - First Aid Measures

Eyes: Flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical aid immediately.
Skin: Get medical aid. Flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse.
Ingestion: If victim is conscious and alert, give 2-4 cupfuls of milk or water. Never give anything by mouth to an unconscious person. Get medical aid immediately.
Inhalation: Get medical aid immediately. Remove from exposure and move to fresh air immediately. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Do NOT use mouth-to-mouth resuscitation.
Notes to Physician: Treat symptomatically and supportively.
Antidote: There exists several chelation agents. The determination of there use should be made only by qualified medical personnel.

Section 5 - Fire Fighting Measures

General Information: Evacuate area and fight fire from a safe distance. As in any fire, wear a self-contained breathing apparatus in pressure-demand, MSHA/NIOSH (approved or equivalent), and full protective gear. May burn with invisible flame. Water reactive. Material will react with water and may release a flammable and/or toxic gas. Use water spray to keep fire-exposed containers cool. Spontaneously ignitable in air. Vapors may be heavier than air. They can spread along the ground and collect in low or confined areas. May burn rapidly with flare burning effect. May re-ignite after fire is extinguished. Containers may explode if exposed to fire.
Extinguishing Media: Do NOT use water directly on fire. Do NOT get water inside containers. Contact professional fire-fighters immediately. Cool containers with flooding quantities of water until well after fire is out. For small fires, use dry chemical, soda ash, lime or sand. For large fires, use dry sand, dry chemical, soda ash or lime or withdraw from area and let fire burn.
Flash Point: Not available.
Autoignition Temperature: Not available.
Explosion Limits, Lower:N/A
Upper: N/A
NFPA Rating: (estimated) Health: 2; Flammability: 2; Instability: 2; Special Hazard: -W-

Section 6 - Accidental Release Measures

General Information: Use proper personal protective equipment as indicated in Section 8.
Spills/Leaks: Clean up spills immediately, observing precautions in the Protective Equipment section. Sweep up or absorb material, then place into a suitable clean, dry, closed container for disposal. Isolate area and deny entry. Place under an inert atmosphere. Do not use combustible materials such as paper towels to clean up spill.

Section 7 - Handling and Storage

Handling: Wash thoroughly after handling. Remove contaminated clothing and wash before reuse. Use only in a well-ventilated area. Minimize dust generation and accumulation. Use spark-proof tools and explosion proof equipment. Avoid contact with eyes, skin, and clothing. Avoid contact with skin and eyes. Avoid ingestion and inhalation. Handle under an inert atmosphere. Store protected from air.
Storage: Keep away from heat, sparks, and flame. Store in a cool, dry place. Keep away from water. Refrigerator/flammables. Keep containers tightly closed. Do not expose to air. Store under an inert atmosphere.

Section 8 - Exposure Controls, Personal Protection

Engineering Controls: Use explosion-proof ventilation equipment. Use adequate ventilation to keep airborne concentrations low.
Exposure Limits

Chemical Name	ACGIH	NIOSH	OSHA - Final PELs
Cobalt carbonyl	0.1 mg/m3 TWA (as Co)	0.1 mg/m3 TWA (as Co)	none listed
Hexane	50 ppm TWA; Skin - potential significant contribution to overall exposure by the cutaneous r oute	50 ppm TWA; 180 mg/m3 TWA 1100 ppm IDLH	500 ppm TWA; 1800 mg/m3 TWA

OSHA Vacated PELs: Cobalt carbonyl: 0.1 mg/m3 TWA (as Co) Hexane: 50 ppm TWA; 180 mg/m3 TWA
Personal Protective Equipment
Eyes: Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166.
Skin: Wear appropriate gloves to prevent skin exposure.
Clothing: Wear appropriate protective clothing to minimize contact with skin.
Respirators: A respiratory protection program that meets OSHA's 29 CFR 1910.134 and ANSI Z88.2 requirements or European Standard EN 149 must be followed whenever workplace conditions warrant respirator use. Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.

Section 9 - Physical and Chemical Properties

Physical State: Solid
Appearance: dark orange
Odor: none reported
pH: Not available.
Vapor Pressure: Not available.
Vapor Density: 12.0
Evaporation Rate: Not available.
Viscosity: Not available.
Boiling Point: 52 deg C
Freezing/Melting Point:51.00 - 52.00 deg C
Decomposition Temperature:> 52 deg C
Solubility: insoluble
Specific Gravity/Density:1.8100g/cm3
Molecular Formula:C8Co2O8
Molecular Weight:341.8616

Section 10 - Stability and Reactivity

Chemical Stability: Stable under normal temperatures and pressures. Powder or liquid is pyrophoric.
Conditions to Avoid: Incompatible materials, ignition sources, dust generation, exposure to air, strong oxidants.
Incompatibilities with Other Materials: Strong oxidizing agents.
Hazardous Decomposition Products: Carbon monoxide, irritating and toxic fumes and gases, carbon dioxide, oxides of cobalt.
Hazardous Polymerization: Has not been reported

Section 11 - Toxicological Information

RTECS#:
CAS# 10210-68-1: GG0300000
CAS# 110-54-3: MN9275000
LD50/LC50:
CAS# 10210-68-1:
Inhalation, mouse: LC50 = 26900 ug/m3/2H;

Inhalation, rat: LC50 = 165 mg/m3;
Oral, mouse: LD50 = 378 mg/kg;
Oral, rat: LD50 = 754 mg/kg;
.

CAS# 110-54-3:
Draize test, rabbit, eye: 10 mg Mild;
Inhalation, mouse: LC50 = 150000 mg/m3/2H;
Inhalation, rat: LC50 = 48000 ppm/4H;
Inhalation, rat: LC50 = 627000 mg/m3/3M;
Oral, rat: LD50 = 25 gm/kg;
.

Carcinogenicity:
CAS# 10210-68-1:

- **ACGIH:** Not listed.
- **California:** Not listed.
- **NTP:** Not listed.
- **IARC:** Group 2B carcinogen

CAS# 110-54-3: Not listed by ACGIH, IARC, NTP, or CA Prop 65.

Epidemiology: No data available.
Teratogenicity: No data available.
Reproductive Effects: No data available.
Mutagenicity: No data available.
Neurotoxicity: No data available.
Other Studies:

Section 12 - Ecological Information

No information available.

Section 13 - Disposal Considerations

Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. US EPA guidelines for the classification determination are listed in 40 CFR Parts 261.3. Additionally, waste generators must consult state and local hazardous waste regulations to ensure complete and accurate classification.
RCRA P-Series: None listed.
RCRA U-Series: None listed.

Section 14 - Transport Information

	US DOT	Canada TDG
Shipping Name:	DOT regulated - small quantity provisions apply (see 49CFR173.4)	FLAMMABLE SOLID ORGANIC NOS (DICOBALT OCTACARBONYL)
Hazard Class:		4.1
UN Number:		UN1325
Packing Group:		II

Section 15 - Regulatory Information

US FEDERAL

TSCA
CAS# 10210-68-1 is listed on the TSCA inventory.
CAS# 110-54-3 is listed on the TSCA inventory.
Health & Safety Reporting List
None of the chemicals are on the Health & Safety Reporting List.
Chemical Test Rules
None of the chemicals in this product are under a Chemical Test Rule.
Section 12b
None of the chemicals are listed under TSCA Section 12b.
TSCA Significant New Use Rule
None of the chemicals in this material have a SNUR under TSCA.
CERCLA Hazardous Substances and corresponding RQs
CAS# 110-54-3: 5000 lb final RQ; 2270 kg final RQ
SARA Section 302 Extremely Hazardous Substances
CAS# 10210-68-1: 10 lb TPQ (lower threshold); 10000 lb TPQ (upper thre shold)
SARA Codes
CAS # 110-54-3: immediate, delayed, fire.
Section 313
This material contains Cobalt carbonyl (listed as Cobalt compounds), 95%, (CAS# 10210-68-1) which is subject to the reporting requirements of Section 313 of SARA Title III and 40 CFR Part 373.
This material contains Hexane (CAS# 110-54-3, 5%),which is subject to the reporting requirements of Section 313 of SARA Title III and 40 CFR Part 373.

Clean Air Act:
CAS# 10210-68-1 (listed as Cobalt compounds) is listed as a hazardous air pollutant (HAP).
CAS# 110-54-3 is listed as a hazardous air pollutant (HAP).
This material does not contain any Class 1 Ozone depletors.
This material does not contain any Class 2 Ozone depletors.

Clean Water Act:
None of the chemicals in this product are listed as Hazardous Substances under the CWA.
None of the chemicals in this product are listed as Priority Pollutants under the CWA.
None of the chemicals in this product are listed as Toxic Pollutants under the CWA.

OSHA:
None of the chemicals in this product are considered highly hazardous by OSHA.

STATE
CAS# 10210-68-1 can be found on the following state right to know lists: California, New Jersey, Pennsylvania, Minnesota, Massachusetts.
CAS# 110-54-3 can be found on the following state right to know lists: New Jersey, Pennsylvania, Minnesota, Massachusetts.

California Prop 65

California No Significant Risk Level: None of the chemicals in this product are listed.

European/International Regulations

European Labeling in Accordance with EC Directives

Hazard Symbols:
T+ F

Risk Phrases:
R 11 Highly flammable.
R 22 Harmful if swallowed.
R 42/43 May cause sensitization by inhalation and skin contact.

Safety Phrases:
S 16 Keep away from sources of ignition - No smoking.
S 24/25 Avoid contact with skin and eyes.

WGK (Water Danger/Protection)
CAS# 10210-68-1: No information available.
CAS# 110-54-3: 1

Canada - DSL/NDSL
CAS# 10210-68-1 is listed on Canada's DSL List.
CAS# 110-54-3 is listed on Canada's DSL List.

Canada - WHMIS
This product has a WHMIS classification of B4.
This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all of the information required by those regulations.

Canadian Ingredient Disclosure List
CAS# 10210-68-1 is listed on the Canadian Ingredient Disclosure List.
CAS# 110-54-3 is listed on the Canadian Ingredient Disclosure List.

Section 16 - Additional Information

MSDS Creation Date: 5/01/1998
Revision #5 Date: 6/21/2006