Material Safety Data Sheet
Sodium hexanitrocobaltate(III)

MSDS# 01487

Section 1 - Chemical Product and Company Identification

MSDS Name: Sodium hexanitrocobaltate(III)
Catalog Numbers: AC214860000, AC214860050, AC214860250, AC214861000, S280-100

Cobaltate(3-), hexakis(nitrito-N)-, trisodium (OC-6-11)-; Sodium cobaltinitrite; Sodium nitrocobaltate(III);
Synonyms: Trisodium hexanitritocobaltate; Trisodium hexanitritocobaltate(3-); Trisodium hexanitrocobaltate; Trisodium hexanitrocobaltate(3-); Cobaltate(3-), hexanitro-, trisodium.

Company Identification:
Acros Organics BVBA
Janssen Pharmaceuticalaan 3a
2440 Geel, Belgium

Company Identification: (USA)
Acros Organics
One Reagent Lane
Fair Lawn, NJ 07410

For information in the US, call: 800-ACROS-01
For information in Europe, call: +32 14 57 52 11
Emergency Number, Europe: +32 14 57 52 99
Emergency Number US: 201-796-7100
CHEMTREC Phone Number, US: 800-424-9300
CHEMTREC Phone Number, Europe: 703-527-3887

Section 2 - Composition, Information on Ingredients

CAS#: 13600-98-1
Chemical Name: Sodium cobaltinitrate
%: >99
EINECS#: 237-077-7

Hazard Symbols: XN O
Risk Phrases: 42/43 8

Section 3 - Hazards Identification

EMERGENCY OVERVIEW
Danger! Strong oxidizer. Contact with other material may cause a fire. May cause cardiac disturbances. May cause lung damage. May cause allergic respiratory and skin reaction. May cause eye, skin, and respiratory tract irritation. Impairs the oxygen carrying capacity of the blood. Target Organs: Blood, heart, lungs.

Potential Health Effects
Eye: May cause eye irritation.
Skin: May cause skin sensitization, an allergic reaction, which becomes evident upon re-exposure to this material. Methemoglobinemia is characterized by dizziness, drowsiness, headache, shortness of breath, cyanosis (bluish discoloration of skin due to deficient oxygenation of the blood), rapid heart rate and chocolate-brown colored
blood. This product contains nitrite which may cause methemoglobinemia. May cause allergic respiratory reaction. May cause effects similar to those described for ingestion. Numerous studies have linked pulmonary effects with exposure to cobalt and its compounds. Exposure at 0.1 mg/m³ or less of cobalt metal and inorganic compounds of cobalt caused asthma and changes in pulmonary function. Chronic inhalation and ingestion may cause effects similar to those of acute inhalation and ingestion. Cobalt compounds may cause cancer based upon animal studies. May cause cyanosis - a blue-gray coloring of the skin and lips caused by a lack of oxygen.

Section 4 - First Aid Measures

Eyes: Immediately 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 immediately. Immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes.

Ingestion: Never give anything by mouth to an unconscious person. Get medical aid immediately. Do NOT induce vomiting. If conscious and alert, rinse mouth and drink 2-4 cupfuls of milk or water.

Inhalation: Get medical aid immediately. Remove from exposure and move to fresh air immediately. If breathing is difficult, give oxygen. Do not use mouth-to-mouth resuscitation if victim ingested or inhaled the substance; induce artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device.

Notes to Physician: Treat symptomatically and supportively.

Section 5 - Fire Fighting Measures

General Information: As in any fire, wear a self-contained breathing apparatus in pressure-demand, MSHA/NIOSH (approved or equivalent), and full protective gear. Strong oxidizer. Contact with other material may cause fire. During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion.

Extinguishing Media: Use extinguishing media most appropriate for the surrounding fire.

Autoignition Temperature: Not applicable.

Flash Point: Not applicable.

Explosion Limits: Not available

Explosion Limits: Not available

NFPA Rating: ; instability: OX

Section 6 - Accidental Release Measures

General Information: Use proper personal protective equipment as indicated in Section 8.

Spills/Leaks: Sweep up, then place into a suitable container for disposal. Avoid generating dusty conditions. Provide ventilation. Do not use combustible materials such as paper towels to clean up spill. Keep combustibles (wood, paper, oil, etc.) away from spilled material.

Section 7 - Handling and Storage

Handling: Wash thoroughly after handling. Remove contaminated clothing and wash before reuse. Minimize dust generation and accumulation. Avoid contact with eyes, skin, and clothing. Keep from contact with clothing and other combustible materials. Do not breathe dust. Use only with adequate ventilation. Inform laundry personnel of contaminant's hazards.

Storage: Do not store near combustible materials. Store in a tightly closed container. Store in a cool, dry, well-ventilated area away from incompatible substances. Avoid storage on wood floors.

Section 8 - Exposure Controls, Personal Protection

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>ACGIH</th>
<th>NIOSH</th>
<th>OSHA - Final PELs</th>
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<tbody>
<tr>
<td>Sodium cobaltinitrate</td>
<td>0.02 mg/m³ TWA</td>
<td>none listed</td>
<td>none listed</td>
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<tr>
<td>(as Co)</td>
<td>(listed under Cobalt, inorganic)</td>
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OSHA Vacated PELs: Sodium cobaltinitrate: None listed

Engineering Controls:
Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower. Use process enclosure, local exhaust ventilation, or other engineering controls to control airborne levels.

Exposure Limits

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 protective clothing to prevent skin exposure.
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.

Section 9 - Physical and Chemical Properties

| Physical State: Crystalline powder |
| Color: yellow-brown |
| Odor: weakly of nitric acid |
| pH: ~5 (100g/L H2O) |
| Vapor Pressure: Not available |
| Vapor Density: Not available |
| Evaporation Rate: negligible |
| Viscosity: Not available |
| Boiling Point: Not available |
| Freezing/Melting Point: Not available |
| Decomposition Temperature: Not available |
| Solubility in water: Soluble |
| Specific Gravity/Density: Not available. |
| Molecular Formula: CoN6Na3O12 |
| Molecular Weight: 403.94 |

Section 10 - Stability and Reactivity

Chemical Stability: Stable under normal temperatures and pressures.
Conditions to Avoid: Dust generation, excess heat.
Incompatibilities with Other Materials: Reducing agents, amines, mineral acids, organic materials, combustible materials.
Hazardous Decomposition Products: Nitrogen oxides, cobalt/cobalt oxides.
Hazardous Polymerization: Has not been reported.

Section 11 - Toxicological Information

RTECS#: CAS# 13600-98-1: GF9480000
LD50/LC50: RTECS: Not available.
Carcinogenicity: Sodium cobaltinitrate - IARC: Group 2B carcinogen (Cobalt compounds).
Other: See actual entry in RTECS for complete information.

Section 12 - Ecological Information

Not available

Section 13 - Disposal Considerations
Dispose of in a manner consistent with federal, state, and local regulations.

Section 14 - Transport Information

US DOT
Shipping Name: OXIDIZING SOLID, N.O.S.
Hazard Class: 5.1
Section 15 - Regulatory Information

European/International Regulations

European Labeling in Accordance with EC Directives

Hazard Symbols: XN O

Risk Phrases:
- R 42/43 May cause sensitization by inhalation and skin contact.
- R 8 Contact with combustible material may cause fire.

Safety Phrases:
- S 17 Keep away from combustible material.

WGK (Water Danger/Protection)

CAS# 13600-98-1: 2

Canada

Canadian WHMIS Classifications: D2A, C

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.

CAS# 13600-98-1 is not listed on Canada's Ingredient Disclosure List.

US Federal

TSCA

CAS# 13600-98-1 is not listed on the TSCA Inventory. It is for research and development use only.

Section 16 - Other Information

MSDS Creation Date: 8/24/1997
Revision #7 Date 7/20/2009

The information above is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantibility or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes. In no event shall the company be liable for any claims, losses, or damages of any third party or for lost profits or any special, indirect, incidental, consequential, or exemplary damages howsoever arising, even if the company has been advised of the possibility of such damages.

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