SAFETY DATA SHEET

1. Identification

Product identifier: CHROMIUM OXIDE GO4099-PURE

Manufacturer/Importer/Supplier/Distributor information

Manufacturer

Company name: BRENNTAG CANADA INC
Address: 43 Jutland Rd.
Toronto, ON M8Z 2G6
Canada
Telephone: 416-259-8231
Website: http://www.brenntag.com/canada/en/
E-mail: RegulatoryAffairs@Brenntag.ca
Emergency phone number: 1-855-273-6824

2. Hazard(s) identification

Physical hazards: Not classified.
Health hazards:
- Sensitization, respiratory: Category 1
- Sensitization, skin: Category 1

Environmental hazards:
- Hazardous to the aquatic environment, long-term hazard: Category 1

Label elements

Signal word: Danger

Hazard statements:
- May cause an allergic skin reaction. May cause allergy or asthma symptoms or breathing difficulties if inhaled. Very toxic to aquatic life with long lasting effects.

Precautionary statement

Prevention:
- Avoid breathing dust/fume/gas/mist/vapours/spray. Contaminated work clothing should not be allowed out of the workplace. Avoid release to the environment. Wear protective gloves. Wear respiratory protection.

Response:
- IF ON SKIN: Wash with plenty of water. IF INHALED: Remove person to fresh air and keep comfortable for breathing. If skin irritation or rash occurs: Get medical advice/attention. If experiencing respiratory symptoms: Call a POISON CENTRE/doctor. Take off contaminated clothing and wash it before reuse. Collect spillage.

Storage:
- Store away from incompatible materials.

Disposal:
- Dispose of contents/container in accordance with local/regional/national/international regulations.

Other hazards: None known.

Supplemental information:
- 99.1 % of the mixture consists of component(s) of unknown acute oral toxicity. 99.1 % of the mixture consists of component(s) of unknown acute dermal toxicity. 99.1 % of the mixture consists of component(s) of unknown acute hazards to the aquatic environment.

3. Composition/information on ingredients

Mixtures

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>Common name and synonyms</th>
<th>CAS number</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHROMIUM (III) OXIDE</td>
<td></td>
<td>1308-38-9</td>
<td>99.1</td>
</tr>
<tr>
<td>Other components below reportable levels</td>
<td></td>
<td></td>
<td>0.9</td>
</tr>
</tbody>
</table>

All concentrations are in percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.
4. First-aid measures

**Inhalation**
If breathing is difficult, remove to fresh air and keep at rest in a position comfortable for breathing. Oxygen or artificial respiration if needed. Do not use mouth-to-mouth method if victim 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. If experiencing respiratory symptoms: Call a POISON CENTRE or doctor/physician.

**Skin contact**
Remove contaminated clothing immediately and wash skin with soap and water. In case of eczema or other skin disorders: Seek medical attention and take along these instructions.

**Eye contact**
Rinse with water. Get medical attention if irritation develops and persists.

**Ingestion**
Difficulty in breathing. May cause an allergic skin reaction. Dermatitis. Rash.

5. Fire-fighting measures

**Suitable extinguishing media**
Water fog. Foam. Dry chemical powder. Carbon dioxide (CO2).

**Unsuitable extinguishing media**
Do not use water jet as an extinguisher, as this will spread the fire.

**Specific hazards arising from the chemical**
During fire, gases hazardous to health may be formed.

**Special protective equipment and precautions for firefighters**
Self-contained breathing apparatus and full protective clothing must be worn in case of fire.

**Fire fighting equipment/instructions**
Use water spray to cool unopened containers.

6. Accidental release measures

**Personal precautions, protective equipment and emergency procedures**
Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Wear appropriate protective equipment and clothing during clean-up. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ensure adequate ventilation. Local authorities should be advised if significant spillages cannot be contained. For personal protection, see section 8 of the SDS.

**Methods and materials for containment and cleaning up**
Prevent entry into waterways, sewer, basements or confined areas. Stop the flow of material, if this is without risk. Following product recovery, flush area with water. For waste disposal, see section 13 of the SDS. For waste disposal, see section 13 of the SDS.

**Environmental precautions**
Avoid release to the environment. Inform appropriate managerial or supervisory personnel of all environmental releases. Prevent further leakage or spillage if safe to do so. Avoid discharge into drains, water courses or onto the ground.

7. Handling and storage

**Precautions for safe handling**
Avoid breathing dust/fume/gas/mist/vapours/spray. Avoid contact with eyes, skin, and clothing. Provide adequate ventilation. Wear appropriate personal protective equipment. Avoid release to the environment. Observe good industrial hygiene practices.

**Conditions for safe storage, including any incompatibilities**
Store in original tightly closed container. Store in a well-ventilated place. Store away from incompatible materials (see Section 10 of the SDS). Store away from incompatible materials (see Section 10 of the SDS).

8. Exposure controls/personal protection

Recommendations listed in this section indicate the type of equipment, which will provide protection against overexposure to this product. Conditions of use, adequacy of engineering or other control measures, and actual exposures will dictate the need for specific protective devices at your workplace.

**Occupational exposure limits**
No exposure limits noted for ingredient(s).
Consult provincial or territorial exposure values, as may apply.

**Biological limit values**
- No biological exposure limits noted for the ingredient(s).

**Appropriate engineering controls**
- Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. General ventilation normally adequate.

**Individual protection measures, such as personal protective equipment**
- The following are recommendations only for the use of PPE. These recommendations cannot anticipate the variety of workplaces where the product will be used, nor how the product will be used in a variety of applications and processes. In determining appropriate PPE and engineering controls, it is the duty of the employer / user to evaluate their use of this product in accordance with the requirements of the local jurisdiction, and, if necessary, in conjunction with a professional industrial hygienist.

  **Eye/face protection**
  - If contact is likely, safety glasses with side shields are recommended.

  **Skin protection**
  - **Hand protection**
    - Wear appropriate chemical resistant gloves. Suitable gloves can be recommended by the glove supplier.
  - **Other**
    - Wear appropriate chemical resistant clothing.
  - **Respiratory protection**
    - Wear positive pressure self-contained breathing apparatus (SCBA).
  - **Thermal hazards**
    - Wear appropriate thermal protective clothing, when necessary.

**General hygiene considerations**
- Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants. Contaminated work clothing should not be allowed out of the workplace.

**9. Physical and chemical properties**

**Appearance**
- **Physical state**
  - Solid.
- **Form**
  - Solid.
- **Colour**
  - GREEN
- **Odour**
  - ODORLESS
- **Odour threshold**
  - Not available.
- **pH**
  - Not available.
- **Melting point/freezing point**
  - Not available.
- **Initial boiling point and boiling range**
  - 3980.42 °C (7196.76 °F) estimated
- **Flash point**
  - Not available.
- **Evaporation rate**
  - Not available.
- **Flammability (solid, gas)**
  - Not available.

**Upper/lower flammability or explosive limits**
- **Flammability limit - lower (%)**
  - Not available.
- **Flammability limit - upper (%)**
  - Not available.
- **Explosive limit - lower (%)**
  - Not available.
- **Explosive limit – upper (%)**
  - Not available.
- **Vapour pressure**
  - Not available.
- **Vapour density**
  - Not available.
- **Relative density**
  - Not available.
- **Solubility(ies)**
  - **Solubility (water)**
    - Not available.
Material name: CHROMIUM OXIDE GO4099-PURE

Partition coefficient
(n-octanol/water) Not available.
Auto-ignition temperature Not available.
Decomposition temperature Not available.
Viscosity Not available.

Other information
Density 1.00 lbs/gal
Explosive properties Not explosive.
Oxidising properties Not oxidising.
Specific gravity 0.12

10. Stability and reactivity
Reactivity The product is stable and non-reactive under normal conditions of use, storage and transport.
Chemical stability Material is stable under normal conditions.
Possibility of hazardous reactions Hazardous polymerisation does not occur.
Conditions to avoid Contact with incompatible materials.
Incompatible materials Strong oxidising agents.
Hazardous decomposition products No hazardous decomposition products are known.

11. Toxicological information

Information on likely routes of exposure
- Inhalation May cause allergy or asthma symptoms or breathing difficulties if inhaled.
- Skin contact May cause an allergic skin reaction.
- Eye contact Direct contact with eyes may cause temporary irritation.
- Ingestion Expected to be a low ingestion hazard.

Symptoms related to the physical, chemical and toxicological characteristics
Difficulty in breathing. May cause an allergic skin reaction. Dermatitis. Rash.

Information on toxicological effects

Acute toxicity Not known.
Skin corrosion/irritation Prolonged skin contact may cause temporary irritation.
Serious eye damage/eye irritation Direct contact with eyes may cause temporary irritation.

Respiratory or skin sensitisation
Respiratory sensitisation May cause allergy or asthma symptoms or breathing difficulties if inhaled.
Skin sensitisation May cause an allergic skin reaction.
Germ cell mutagenicity No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.
Carcinogenicity Not available.
Reproductive toxicity This product is not expected to cause reproductive or developmental effects.
Specific target organ toxicity - single exposure Not classified.
Specific target organ toxicity - repeated exposure Not classified.
Aspiration hazard Not an aspiration hazard.

12. Ecological information

Ecotoxicity Very toxic to aquatic life with long lasting effects.
Persistence and degradability No data is available on the degradability of any ingredients in the mixture.
Bioaccumulative potential: No data available.
Mobility in soil: No data available.
Other adverse effects: No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component.

13. Disposal considerations

Disposal instructions: Collect and reclaim or dispose in sealed containers at licensed waste disposal site. Do not allow this material to drain into sewers/water supplies. Do not contaminate ponds, waterways or ditches with chemical or used container. Dispose of contents/container in accordance with local/regional/national/international regulations.

Local disposal regulations: Dispose in accordance with all applicable regulations.
Hazardous waste code: The waste code should be assigned in discussion between the user, the producer and the waste disposal company.
Waste from residues / unused products: Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions).
Contaminated packaging: Since emptied containers may retain product residue, follow label warnings even after container is emptied. Empty containers should be taken to an approved waste handling site for recycling or disposal.

14. Transport information

Transportation information on packaging may be different from that listed.

DOT

UN number: UN3077
UN proper shipping name: Environmentally hazardous substances, solid, n.o.s. (CHROMIUM (III) OXIDE), MARINE POLLUTANT
Transport hazard class(es):
- Class: 9
- Subsidiary risk: -
- Label(s): 9
Packing group: III
Environmental hazards: Yes
Marine pollutant: Yes
Special precautions for user: Read safety instructions, SDS and emergency procedures before handling.
Special provisions: 8, 146, 335, A112, B54, IB8, IP3, N20, T1, TP33
Packaging exceptions: 155
Packaging non bulk: 213
Packaging bulk: 240

IATA

UN number: UN3077
UN proper shipping name: Environmentally hazardous substance, solid, n.o.s. (CHROMIUM (III) OXIDE)
Transport hazard class(es):
- Class: 9
- Subsidiary risk: -
- Packing group: III
- Environmental hazards: Yes
- ERG Code: 9L
Special precautions for user: Read safety instructions, SDS and emergency procedures before handling.
Other information:
- Passenger and cargo aircraft: Allowed with restrictions.
- Cargo aircraft only: Allowed with restrictions.

IMDG

UN number: UN3077
UN proper shipping name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (CHROMIUM (III) OXIDE), MARINE POLLUTANT
Transport hazard class(es):
- Class: 9
Material name: CHROMIUM OXIDE GO4099-PURE
Issue date: 25-May-2018    Version #: 01

Subsidiary risk -
Packing group III
Environmental hazards
Marine pollutant Yes
EmS F-A, S-F
Special precautions for user Read safety instructions, SDS and emergency procedures before handling.
Not applicable.
Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code
DOT; IATA; IMDG

Marine pollutant

General information IMDG Regulated Marine Pollutant.

TDG
Not regulated as dangerous goods.

15. Regulatory information
Canadian regulations This product has been classified in accordance with the hazard criteria of the HPR and the SDS contains all the information required by the HPR.

Canada DSL Inventory: Registration Status
Chromium oxide (Cr2O3) (CAS 1308-38-9) Listed

Controlled Drugs and Substances Act
Not regulated.

Export Control List (CEPA 1999, Schedule 3)
Not listed.

Greenhouse Gases
Not listed.

Precursor Control Regulations
Not regulated.

US federal regulations This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)
Not regulated.

CERCLA Hazardous Substance List (40 CFR 302.4)
Not listed.
Material name: CHROMIUM OXIDE GO4099-PURE

WHMIS Group #: 00075576
Issue date: 25-May-2018    Version #: 01

SARA 304 Emergency release notification
Not regulated.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1052)
Not listed.

Superfund Amendments and Reauthorization Act of 1986 (SARA)
SARA 302 Extremely hazardous substance
Not listed.
SARA 311/312 Hazardous chemical
No
SARA 313 (TRI reporting)
Not regulated.

Other federal regulations
Drug Enforcement Administration (DEA). List 2, Essential Chemicals (21 CFR 1310.02(b) and 1310.04(f)(2) and Chemical Code Number
Not listed.
Drug Enforcement Administration (DEA). List 1 & 2 Exempt Chemical Mixtures (21 CFR 1310.12(c))
Not regulated.

DEA Exempt Chemical Mixtures Code Number
Not regulated.

US state regulations
US. California Proposition 65
Not listed.

International regulations
Stockholm Convention
Not applicable.
Rotterdam Convention
Not applicable.
Kyoto protocol
Not applicable.
Montreal Protocol
Not applicable.
Basel Convention
Not applicable.

International Inventories

<table>
<thead>
<tr>
<th>Country(s) or region</th>
<th>Inventory name</th>
<th>On inventory (yes/no)*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Australia</td>
<td>Australian Inventory of Chemical Substances (AICS)</td>
<td>Yes</td>
</tr>
<tr>
<td>Canada</td>
<td>Domestic Substances List (DSL)</td>
<td>Yes</td>
</tr>
<tr>
<td>Canada</td>
<td>Non-Domestic Substances List (NDSL)</td>
<td>No</td>
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<tr>
<td>China</td>
<td>Inventory of Existing Chemical Substances in China (IECSC)</td>
<td>Yes</td>
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<tr>
<td>Europe</td>
<td>European Inventory of Existing Commercial Chemical Substances (EINECS)</td>
<td>Yes</td>
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<tr>
<td>Europe</td>
<td>European List of Notified Chemical Substances (ELINCS)</td>
<td>No</td>
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<td>Japan</td>
<td>Inventory of Existing and New Chemical Substances (ENCS)</td>
<td>Yes</td>
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<td>Korea</td>
<td>Existing Chemicals List (ECL)</td>
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<td>New Zealand</td>
<td>New Zealand Inventory</td>
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<tr>
<td>Philippines</td>
<td>Philippine Inventory of Chemicals and Chemical Substances (PICCS)</td>
<td>Yes</td>
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<tr>
<td>Taiwan</td>
<td>Taiwan Toxic Chemical Substances (TCS)</td>
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<tr>
<td>United States &amp; Puerto Rico</td>
<td>Toxic Substances Control Act (TSCA) Inventory</td>
<td>Yes</td>
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</tbody>
</table>

*“A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s).
A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).
16. Other information

<table>
<thead>
<tr>
<th>Issue date</th>
<th>Version No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>25-May-2018</td>
<td>01</td>
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