1. PRODUCT NAME AND COMPANY IDENTIFICATION

Product Name: CHROMIUM GREEN OXIDE
Trade Name: Chromium Green Oxide
Chemical Family: Metal Oxide
CAS Number: 1308-38-9
Cr₂O₃
Formula: C.I. Pigment Green 17
Product Name: Personal Care Formulations
Company Name: Natural Sourcing
Company Address: 341 Christian Street, Oxford, CT 06478, USA
Date Issued: 09/04/2013
Emergency Telephone Number: Chemtrec Tel: (800) 262-8200

2. COMPOSITION/INGREDIENT INFORMATION

<table>
<thead>
<tr>
<th>Ingredient Name</th>
<th>CAS Number</th>
<th>Content</th>
<th>Exposure Limits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chromic Oxide</td>
<td>12001-99-9</td>
<td>&gt;98%</td>
<td>ACGIH: 0.5 mg/m³ as Cr</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>OSHA PEL: 0.5 mg/m³ 8 hr. TWA (as Cr)</td>
</tr>
</tbody>
</table>

3. HAZARDS IDENTIFICATION

Potential Health Effects:

Acute Effects: Hazardous in case of skin contact (irritant), of eye contact (irritant), of ingestion, of inhalation. Hazardous in case of inhalation. Slightly hazardous in case of skin contact *sensitizer).

CARCINOGENIC EFFECTS: A4 (Not classifiable for human (by ACGIH), 3 (Not classifiable for human) by IARC.

Chronic Effects: MUTAGENIC EFFECTS: Mutagenic for mammalian somatic cells. Mutagenic for bacteria and/or yeast.

TERATOGENIC EFFECTS: Not available.

DEVELOPMENTAL TOXICITY: Not available. The substance may be toxic to upper respiratory tract, skin. Repeated or prolonged exposure to the substance can produce target organs damage.
4. FIRST AID MEASURES

Eyes: Remove contacts. Flush with plenty of water for 15 minutes. Get medical attention if irritation persists. Remove contaminated clothing. Wash with soap and water.

Skin: Cover irritated skin with an emollient. Seek medical attention if symptoms persist. Do NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. If large quantities are swallowed, call a physician immediately. Loosen tight clothing such as a collar, tie, belt or waistband. Remove to fresh air. If breathing is difficult, give oxygen. If not breathing, give artificial respiration. If symptoms persist, seek medical attention.

Inhalation: Wear NIOSH approved, positive pressure, self-contained breathing apparatus and full protective clothing.

5. FIRE FIGHTING MEASURES

Flammability of Product: Non-flammable
Auto Ignition Temperature: Not Applicable
Flash Point: Not Applicable
Flammable Limits: A small amount (less than 0.1% as Cr) of reversion to hexavalent chromium may occur if this product is exposed to elevated temperatures.
Products of Combustion: Chlorine trifluoride reacts violently with Chromium oxide, producing flame.
Extinguishing Media: Use extinguishing material applicable to surrounding fire.
Special Firefighting Procedures: Wear NIOSH approved, positive pressure, self-contained breathing apparatus and full protective clothing.
Unusual Fire & Explosion Hazards: None
Special Remarks on Fire Hazards: Contact between glycerol and Chromium oxide may produce explosion.
Special Remarks on Explosion Hazards: None

6. ACCIDENTAL RELEASE MEASURES (STEPS FOR SPILLS)

Methods for Cleaning Up: Normal clean up procedures. Care should be taken to avoid causing dust to become airborne. Vacuum or use wet clean up techniques and place waste materials into appropriately labeled containers for proper disposal. Finish cleaning by washing area with water.
Disposal must be made in accordance with federal, state and local regulations. As shipped from manufacturer, this product may exceed the RCRA extraction procedure limit of 5 ppm for total soluble chromium. Additional processing especially at elevated temperatures may cause chemical reactions which produce substances which will exceed the RCRA limit. Testing of processed material should be performed to determine the proper waste classification.

Waste Disposal Method: None

7. HANDLING AND STORAGE

Handling
Safe Handling:
Avoid generating dust. Avoid breathing dust. Use only with adequate ventilation so exposure is maintained below TLV. Use personal respiratory protection when necessary. Avoid prolonged, contact with skin and clothing. Avoid contact with eyes. Keep container closed. Wash thoroughly after handling. Wash contaminated clothing before reuse.

Storage
Store in a clean, dry area at ambient temperatures in sealed containers. Conditions of high humidity may require storage in a controlled environment. Do not store above 25℃/77℉. Since actual use by others is beyond the control of the manufacturer, users must take precautions to ensure that the environmental controls are adequate to maintain conditions within the required exposure levels for this product and any reaction products.

8. EXPOSURE CONTROL/PERSONAL PROTECTION
Use process enclosures, local exhaust ventilation, or other engineering controls to keep airborne levels below recommended exposure limits. If user operations generate dust, fume or mist, use ventilation to keep exposure to airborne contaminants below the exposure limit. Safety showers and eye wash stations should be in proximity to work areas.

Eye:
Safety glasses, goggles or face shields

Skin/Body:
Rubber gloves & lab coats

Respiratory:
Use adequate ventilation or NIOSH-approved respiratory devices to prevent inhalation of dust. Use additional appropriate respiratory protection if there is potential to exceed the exposure limits.

Other:
Evaluate need based on application.

Personal Protection in Case of Large Spills:
Splash goggles, synthetic apron, gloves, NIOSH approved self-contained breathing apparatus or equivalent and full protective gear.

Exposure Limits:
TWA: 0.5 (mg(Cr)/m) from ACGIH (TLV) [United States]
Consult local authorities for acceptable exposure limits.

9. PHYSICAL AND CHEMICAL PROPERTIES
Appearance: Solid (crystalline solid, powdered solid)
Odor: Odorless
Molecular Weight: 151.99 g/mole
Color: Green
Boiling Point: 4000℃ / 7232℉
Melting Point: 2435℃ / 4415℉
Specific Gravity: 5.21
Solubility: Insoluble in cold water, acetone and alcohol. Slightly soluble in acids, and alkalies.

10. STABILITY AND REACTIVITY
Stability: Stable
Instability Temperature: Not Available
Conditions of Instability: Incompatible materials.
**11. TOXICOLOGICAL INFORMATION**

<table>
<thead>
<tr>
<th>Routes of Entry:</th>
<th>Inhalation. Ingestion.</th>
</tr>
</thead>
</table>

| Toxicity to Animals: | LD50: Not Available  
LC50: Not Available  
CARCINOGENIC EFFECTS: A4 (Not classifiable for human (by ACGIH), 3 (Not classifiable for human) by IARC. |
|----------------------|-------------------------|

| Chronic Effects on Humans: | MUTAGENIC EFFECTS: Mutagenic for mammalian somatic cells. Mutagenic for bacteria and/or yeast.  
May cause damage to the following organs: upper respiratory tract, skin.  
Hazardous in case of skin contact (irritant), of ingestion, of inhalation. |
|-----------------------------|----------------------------------------|

<table>
<thead>
<tr>
<th>Other Toxic Effects on Humans:</th>
<th>Not Available</th>
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</table>

<table>
<thead>
<tr>
<th>Special Remarks in Toxicity to Animals:</th>
<th>Not Available</th>
</tr>
</thead>
</table>

| Special Remarks on Chronic Effects on Humans: | May cause cancer (tumorigenic) based on animal data.  
Acute Potential Health Effects:  
Skin: May cause skin irritation.  
Eyes: May cause eye irritation.  
Inhalation: May cause respiratory tract irritation.  
Ingestion: May cause gastro-intestinal tract irritation. |
|-----------------------------------------------|----------------|

| Special Remarks on Other Toxic Effects on Humans: | Chronic Potential Health Effects:  
Skin: May cause sensitization dermatitis  
Inhalation: Contains trivalent chromium compound. As noted by ACGIH, in their publication, “Documentation of Threshold Limit Values”, repeated and prolonged exposures may cause delayed effects involving the respiratory system, such as chronic bronchitis, pneumoconiosis. |
|--------------------------------------------------|----------------|

**Corrosivity:** Non-corrosive in presence of glass.  
Hygroscopic. Turns brown on heating, but reverts to green color on cooling. Can react with molten alkali at very high temperatures under oxidizing conditions. May react with chlorine trifluoride, lithium, nitroalkanes, dirubidium acetylide, oxygen difluoride and other strong oxidizers. A vigorous reaction occurs between oxygen difluoride and chromium oxide. Chromium (III) compounds are reduced to Chromium (II) compounds by hypophosphites, concentrated perchloric acid, sodium solution, Cr(III) is readily oxidized to CrO4(-2) by hypchlorite, hypobromite, peroxide, and oxygen under pressure at high temperature. Chromium oxide and rubidium acetylide react exothermically.

**Special Remarks on Reactivity:** Will not occur.

**Conditions to Avoid:** None reported

**Materials to Avoid:** Chlorine trifluoride, lithium, nitroalkanes, dirubidium acetylide, oxygen difluoride, strong oxidizers.

**Hazardous Polymerization:** Will not occur.
12. ECOLOGICAL INFORMATION

Ecotoxicity:

This material is insoluble in water and does not exceed the limit of 5 ppm for total soluble chromium by the RCRA extraction procedure (US). For the protection of fresh water aquatic life, the concentration of Cr (+3) should not exceed 10.3 milligrams/Liter on an acute toxicity basis and Cr (+6) should not exceed 18 micrograms/Liter as a 24 hr. average, never exceeding a maximum of 21 micrograms/liter. For the protection of salt water aquatic life, the concentration of Cr (+3) should not exceed 0.29 micrograms/liter as a 24 hr. average, never exceeding a maximum of 1,260 micrograms/Liter.

13. DISPOSAL CONSIDERATIONS

Disposal must be made in accordance with federal, state and local regulations. As shipped from manufacturer, this product may exceed the RCRA extraction procedure limit of 5 ppm for total soluble chromium. Additional processing especially at elevated temperatures may cause chemical reactions which produce substances which will exceed the RCRA limit. Testing of processed material should be performed to determine the proper waste classification.

14. TRANSPORT INFORMATION

DOT Description: Not a DOT controlled material (United States).
Identification: Not applicable
Special Provisions for Transport: Not applicable

15. REGULATORY INFORMATION

Federal and State Regulations:

Toxic Substances Control Act (TSCA): Chromic Oxide is on the inventory list *40 CFR 710).

Federal Water Pollution Control Act, Clean Water Act, 40 CFR 116:

Chromic Oxide is not covered by the clean water act.

Clean Air Act, 40 CFR 60, Section 111, 40 CFR 61, Section 112:

Chromic Oxide is not covered by the clean air act.


Under this rule Chromic Oxide is hazardous. ACGIH TLV 0.5 mg/m3 TWA as Cr

CERCLA, 40 CFR 117, 302:

Chromic Oxide does not have a listed reportable quantity (RQ).
Superfund Amendments and Reauthorization Act, Act of 1986 (SARA Title III):

Chromic Oxide is subject to the reporting requirements of sections 311, 312, and 313. Chromic Oxide is not listed in Appendix A and B, 40 CFR 355, as an extremely hazardous substance. Our hazard evaluation of Chromic Oxide has determined that this product is hazardous. This product should be reported under the following EPA Hazard categories as indicated:

Immediate (Acute) Health Hazard

Delayed (Chronic) Health Hazard

Fire Hazard

Sudden Release of Pressure Hazard

Reactive Hazard

State Regulations:

California Proposition 65:

This material may contain approximately 100 ppm Hexavalent Chromium. Hexavalent Chromium is on the California Governor’s list of “chemicals known to cause cancer or reproductive toxicity”. The California Health and Welfare Agency has established a “no significant risk” level for Hexavalent Chromium of 0.001 micrograms/day. Workplace exposures to this product below the TLV for chromic oxide could result in exposures to Hexavalent Chromium in excess of 0.001 micrograms/day. Appropriate warnings should be given.

16. ADDITIONAL INFORMATION

The complete range of conditions or methods of use are beyond our control therefore we do not assume any responsibility and expressly disclaim any liability for any use of this product. Information contained herein is believed to be true and accurate however, all statements or suggestions are made without warranty, expressed or implied, regarding accuracy of the information, the hazards connected with the use of the material or the results to be obtained from the use thereof. Compliance with all applicable federal, state, and local laws and local regulations remains the responsibility of the user.

This safety sheet cannot cover all possible situations which the user may experience during processing. Each aspect of your operation should be examined to determine if, or where, additional precautions may be necessary. All health and safety information contained in this bulletin should be provided to your employees or customers.