1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

Product information

Trade name: 888-1045 COLORTREND® RED OXIDE F
Use of the Substance / Preparation: Aqueous colorant
Company: Chromaflo Technologies Corporation
2600 Michigan Avenue
Ashtabula, OH 44005-0816 USA

Telephone: 440-997-5137
Telefax: 440-992-3613

US: CHEMTREC EMERGENCY NUMBER: 800-424-9300
CANADA: CANUTEC EMERGENCY NUMBER: 613-996-6666
Product Regulatory Services: 440-536-9691

2. HAZARDS IDENTIFICATION

*** EMERGENCY OVERVIEW ***

Form-paste Color-red Odor-Glycol odor.

May cause eye, skin and respiratory tract irritation.
May be harmful if swallowed.

POTENTIAL HEALTH EFFECTS

Eye contact
According to test results on COLORTREND base mixtures, this product is classified as a moderate eye irritant. May cause tearing, reddening and/or swelling.

Skin Contact
COLORTREND colorants may cause irritation.

Inhalation
COLORTREND colorants may cause irritation.
Overexposure to aerosols or mists containing ethylene glycol may cause lung irritation. See exposure limit (section 8).

Ingestion
May be harmful if swallowed.
Ingestion of ethylene glycol may cause abdominal discomfort or pain, nausea, vomiting, dizziness, drowsiness, irritability and central nervous system effects. Swallowing large volumes of ethylene glycol causes severe kidney damage and cardiopulmonary effects (metabolic acidosis) which may be fatal. The human oral lethal dose is approximately 1.6 g/kg.

Ingestion of excessive amounts of diethylene glycol causes abdominal discomfort or pain, nausea, vomiting, dizziness, central nervous system effects, kidney damage and cardiopulmonary effects (metabolic acidosis) which may be fatal (estimated human oral lethal dose, 1.0 to 1.2 g/kg) and may cause liver effects.

Ingestion of ethylene glycol can cause neurological impairment.
Repeated ingestion of ethylene glycol can cause bone marrow, liver, and sperm effects.

**Chronic Health Hazard**

Ethylene glycol may aggravate an existing kidney disease. Repeated skin contact with ethylene glycol may, in a very small proportion of cases, cause sensitization with the development of allergic contact dermatitis. The incidence is significantly less than 1% with the undiluted material. Repeated inhalation of ethylene glycol mist may produce signs of central nervous system involvement, particularly dizziness and drowsiness.

Prolonged inhalation of iron oxide dust is known to produce a condition known as siderosis. On X-rays it appears to be a benign pneumoconiosis and is not associated with pulmonary fibrosis or disability unless there is concurrent exposure to other fibrosis producing materials such as silica. Short term exposures to talc may cause lung irritation. Long term excessive exposure to talc dust may cause talcosis, a pulmonary fibrosis which in turn may lead to severe and permanent damage to the lungs. NTP Toxicology and Carcinogenesis Studies of Talc revealed that there is some evidence of carcinogenic activity in male rats and clear evidence of carcinogenic activity in female rats. There was no evidence of carcinogenic activity in male or female mice.

Because this product is a free-flowing liquid or paste, dust inhalation is not an expected route of exposure.

### 3. COMPOSITION/INFORMATION ON INGREDIENTS

**Information on ingredients / Hazardous components**

| Iron oxide | CAS-No. 1332-37-2 | Percent (Wt./ Wt.) 30 - 60 % |
| ethanediol; ethylene glycol | CAS-No. 107-21-1 | Percent (Wt./ Wt.) 10 - 30 % |
| Nonylphenoxypoly(ethylenoxy)ethanol, branched | CAS-No. 68412-54-4 | Percent (Wt./ Wt.) 5 - 10 % |
| Diethylene glycol | CAS-No. 111-46-6 | Percent (Wt./ Wt.) 1 - 5 % |
| Talc, Magnesium silicate hydrate | CAS-No. 14807-96-6 | Percent (Wt./ Wt.) 1 - 5 % |
| C.I. Pigment Black 11 | CAS-No. 1317-61-9 | Percent (Wt./ Wt.) 1 - 5 % |
| Benzenesulfonic acid, mono-C9-17-branched alkyl derivs., compds. with 2-propanamine | CAS-No. 68649-00-3 | Percent (Wt./ Wt.) 1 - 5 % |

**Other information**
This material is classified as hazardous under OSHA regulations.

4. FIRST AID MEASURES

Inhalation
If inhaled, remove to fresh air. If breathing is difficult, give oxygen. If unconscious, evaluate the need for artificial respiration. Get immediate medical attention.

Skin contact
Flush skin with plenty of water. Remove contaminated clothing. Obtain medical attention if irritation develops or persists.

Eye contact
In case of contact, immediately flush eyes with plenty of water. Obtain medical attention if irritation develops.

Ingestion
Do not induce vomiting. If vomiting occurs spontaneously, keep head below hips to prevent aspiration of liquid into the lungs. Get medical attention.
If the heart has stopped or breathing has stopped, trained personnel should begin cardiopulmonary resuscitation or artificial respiration immediately.
Never administer anything by mouth to an individual who rapidly losing conciousness, unconscious or convulsing.

5. FIRE-FIGHTING MEASURES

Flash point
not determined
Method: No information available.

Lower explosion limit
not determined

Upper explosion limit
not determined

Autoignition temperature
not determined

Suitable extinguishing media
In case of fire, use water (flood with water), dry chemical, CO2 or "alcohol" foam.

Specific hazards during fire fighting
Contains material that can burn in fire if contained water is evaporated by heat or fire. Burning will produce hazardous compounds including oxides of: carbon, nitrogen, sulfur.

Further information
As in any fire, wear self-contained positive-pressure breathing apparatus, (MSHA/NIOSH approved or equivalent) and full protective gear. Containers can build up pressure if exposed to heat (fire). Cool with water spray.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions
Wear personal protective equipment; see section 8.
Environmental precautions
Obey relevant local, state, provincial and federal laws and regulations. Do not contaminate any lakes, streams, ponds, groundwater or soil.

Methods for cleaning up
Ventilate area. Absorb spill with inert material and place in a chemical waste container.

7. HANDLING AND STORAGE

Handling

Safe handling advice
Avoid contact with eyes, skin and clothing. Use with adequate ventilation. Avoid breathing vapor or mist. Follow all MSDS/label precautions even after container is emptied because it may retain product residues. Wash thoroughly after handling.

Storage

Requirements for storage areas and containers
Keep in a dry, cool place.
Keep container closed when not in use.
Residual vapors might explode on ignition; do not apply heat, cut, drill, grind or weld on or near this container.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Component occupational exposure guidelines

- **ethanediol; ethylene glycol**
  
  CAS-No. 107-21-1
  
  Control parameters
  
  | 40 ppm | 100 mg/m³ | Aerosol. | Ceiling Limit Value: (ACGIH) |
  | 100 mg/m³ |  |  | | |
  
- **Talc, Magnesium silicate hydrate**
  
  CAS-No. 14807-96-6
  
  Respirable fraction.
  
  The value is for particulate matter containing no asbestos and <1% crystalline silica.
  
  | 2 mg/m³ | Time Weighted Average (TWA): (ACGIH) |
  | 20 millions of particles per cubic foot of air | Time Weighted Average (TWA): (Z3) |
  | 2.4 millions of particles per cubic foot of air | Time Weighted Average (TWA): (Z3) |
Respirable. The exposure limit is calculated from the equation, 250/(%SiO2+5), using a value of 100% SiO2. Lower percentages of SiO2 will yield higher exposure limits.

0.1 mg/m³ Time Weighted Average (TWA):(Z3)
Respirable.
The exposure limit is calculated from the equation, 10/(%SiO2+2), using a value of 100% SiO2. Lower percentages of SiO2 will yield higher exposure limits.

0.3 mg/m³ Time Weighted Average (TWA):(Z3)
Total dust.
The exposure limit is calculated from the equation, 30/(%SiO2+2), using a value of 100% SiO2. Lower values of % SiO2 will give higher exposure limits.

• C.I. Pigment Black 11
CAS-No. 1317-61-9
5 mg/m³ Respirable fraction. PEL:(OSHA Z1)
15 mg/m³ Total dust. PEL:(OSHA Z1)
3 mg/m³ Respirable particles. Time Weighted Average (TWA):(ACGIH)
10 mg/m³ Inhalable particles. Time Weighted Average (TWA):(ACGIH)

• Iron oxide
CAS-No. 1332-37-2
Respirable fraction. (Z3)
Listed.
5 mg/m³ Respirable fraction. PEL:(OSHA Z1)
15 mg/m³ Total dust. PEL:(OSHA Z1)
3 mg/m³ Respirable particles. Time Weighted Average (TWA):(ACGIH)
10 mg/m³ Inhalable particles. Time Weighted Average (TWA):(ACGIH)

Other information
The exposure value for ethylene glycol is given as an aerosol. The AIHA WEEL for diethylene glycol is 50 PPM for total vapor and aerosol and 10 mg/m³ for aerosol alone (eight hour time-weighted averages). The OSHA TWA and ACGIH TWA exposure values for talc are for asbestos free talc expressed as millions of particles per cubic foot (mppcf).
The exposure limit for iron oxide is for dust and fume as Fe.

**Engineering measures**
Use only in well-ventilated areas.

**Personal protective equipment**

**Respiratory protection**
A respiratory protection program that meets OSHA 1910.134 and ANSI Z88.2 or applicable federal/provincial requirements must be followed whenever workplace conditions warrant respirator use. NIOSH's "Respirator Decision Logic" may be useful in determining the suitability of various types of respirators.

**Hand protection**
Use impermeable gloves.

**Eye protection**
Chemical resistant goggles must be worn.

**Skin and body protection**
A safety shower and eye wash fountain should be readily available. To identify additional Personal Protective Equipment (PPE) requirements, it is recommended that a hazard assessment in accordance with the OSHA PPE Standard (29CFR1910.132) be conducted before using this product.

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**9. PHYSICAL AND CHEMICAL PROPERTIES**

**Appearance**

- **Form**: paste
- **Color**: red
- **Odor**: Glycol odor.

**Safety data**

- **pH**: 8.0 - 9.2
- **Boiling point/range**: > 100 °C
- **Flash point**: Method: No information available. not determined
- **Autoignition temperature**: not determined
- **Lower explosion limit**: not determined
- **Upper explosion limit**: not determined
- **Relative density**: 2
- **Solubility/qualitative**: Solubility in water: Dispersible.
- **Viscosity, dynamic**: 85 - 100 KU (25 °C)

**Solvents and Volatiles Data**
10. STABILITY AND REACTIVITY

Conditions to avoid
Not applicable.

Materials to avoid
strong acids, oxidizing substances

Further information
Stable under normal conditions.

11. TOXICOLOGICAL INFORMATION

<table>
<thead>
<tr>
<th>Component</th>
<th>Acute oral toxicity</th>
<th>LD50 Rat:</th>
<th>LD50 Rat(female):</th>
</tr>
</thead>
<tbody>
<tr>
<td>Iron oxide</td>
<td>1332-37-2</td>
<td>&gt; 5000 mg/kg</td>
<td>4000 mg/kg</td>
</tr>
<tr>
<td>ethanediol; ethylene glycol</td>
<td>107-21-1</td>
<td>4000 mg/kg</td>
<td></td>
</tr>
<tr>
<td>Nonylphenoxypoly(ethyleneoxy)ethanol, branched</td>
<td>68412-54-4</td>
<td>3000 mg/kg</td>
<td></td>
</tr>
<tr>
<td>Diethylene glycol</td>
<td>111-46-6</td>
<td>20760 mg/kg</td>
<td></td>
</tr>
</tbody>
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<table>
<thead>
<tr>
<th>Component</th>
<th>Acute dermal toxicity</th>
<th>LD50 Rabbit:</th>
</tr>
</thead>
<tbody>
<tr>
<td>ethanediol; ethylene glycol</td>
<td>107-21-1</td>
<td>10500 mg/kg</td>
</tr>
<tr>
<td>Nonylphenoxypoly(ethyleneoxy)ethanol, branched</td>
<td>68412-54-4</td>
<td>4400 mg/kg</td>
</tr>
<tr>
<td>Diethylene glycol</td>
<td>111-46-6</td>
<td>13300 mg/kg</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Component</th>
<th>Repeated dose toxicity</th>
</tr>
</thead>
<tbody>
<tr>
<td>ethanediol; ethylene glycol</td>
<td>107-21-1</td>
</tr>
<tr>
<td>Chronic ingestion of an ingredient in this product has been shown to cause adverse effects on the peripheral nervous system of laboratory animals.</td>
<td></td>
</tr>
</tbody>
</table>

Talc, Magnesium silicate hydrate
14807-96-6
Inhalation Rat(male)
Testing period: 791 d
LOAEL: 0.006 mg/l
Target organ/effect: Lungs

Component: Talc, Magnesium silicate hydrate
14807-96-6
Short term exposures to talc may cause lung irritation. Long term excessive exposure to talc dust may cause talcosis, a pulmonary fibrosis which in turn may lead to severe and permanent damage to the lungs.
NTP Toxicology and Carcinogenesis Studies of Talc revealed that there is some evidence of carcinogenic activity in male rats and clear evidence of carcinogenic activity in female rats. There was no evidence of carcinogenic activity in male or female mice.

Component: Ethanol; Ethylene glycol
107-21-1
Ethanol glycol has been shown to produce dose-related teratogenic effects in rats and mice when given by gavage or in drinking water at high concentrations or doses. However, there is currently no available information to suggest that ethylene glycol has caused birth defects in humans.

Component: General Toxicity Information
Ethanol glycol may aggravate an existing kidney disease. Repeated skin contact with ethanol glycol may, in a very small proportion of cases, cause sensitization with the development of allergic contact dermatitis. The incidence is significantly less than 1% with the undiluted material. Repeated inhalation of ethanol glycol mist may produce signs of central nervous system involvement, particularly dizziness and drowsiness.

Diethylene glycol
111-46-6
According to long-term animal inhalation studies, very high concentrations of diethylene glycol vapors caused central nervous system effects in mice and rats. However, an extensive review of the literature shows that no such effects have been documented in humans (Patty's Industrial Hygiene and Toxicology, 1982, Third Revised Ed., Vol 2c, p 3838).
In a continuous breeding study of mice, continued ingestion of large amounts of diethylene glycol (6 g/kg/day) caused an adverse effect on fertility and some embryotoxic and fetotoxic effects concurrent with some maternal toxicity. The relevance of these very high doses to humans is uncertain.

12. ECOLOGICAL INFORMATION
General Ecological Information: No ecotoxicological studies are available.

13. DISPOSAL CONSIDERATIONS
WASTE DISPOSAL
Advice on disposal

Waste must be disposed of in accordance with federal, state, provincial and local regulations. CONTAINER DISPOSAL: Empty containers by removing the top and inverting to allow all free-flowing product to drain. To meet regulatory criteria, the container is considered empty when less than 3% remains in the container. Additional special handling is not typically required and the empty container can be discarded with other non-hazardous trash. Note: Local disposal regulations may be more stringent and require additional restrictions or precautions. Customers should check with their local disposal company, municipal or state authority. Recycle of plastic or metal containers may require clean rather than empty containers. In this case the containers can be rinsed with water until the containers are considered generally product free.

14. TRANSPORT INFORMATION

D.O.T. Road/Rail

| Class | 9 |
| UN-No | 3082 |
| Packing group | III |
| Proper shipping name | Environmentally hazardous substance, liquid, n.o.s. |

Loading instructions/Remarks

IATA_C Not dangerous according to transport regulations.
IATA_P Not dangerous according to transport regulations.
IMDG Not dangerous according to transport regulations.
CFR_INWTR USA: Not regulated for transport when package contains less than the reportable quantity listed in section 15 of the msds.
CFR_RAIL USA: Not regulated for transport when package contains less than the reportable quantity listed in section 15 of the msds.
CFR_ROAD USA: Not regulated for transport when package contains less than the reportable quantity listed in section 15 of the msds.

15. REGULATORY INFORMATION

US Federal Regulations

OSHA

If listed below, chemical specific standards apply to the product or components:

- None listed

Clean Air Act Section (112)

If listed below, components present at or above the de minimus level are hazardous air pollutants:

- ethanediol; ethylene glycol
  - CAS-No. 107-21-1
CERCLA Reportable Quantities
If listed below, a reportable quantity (RQ) applies to the product based on the percent of the named component:

- ethanediol; ethylene glycol
  CAS-No.  107-21-1
  Reportable Quantity  30941 lbs

SARA Title III Section 311/312 Hazard Categories
The product meets the criteria only for the listed hazard classes:

- Acute Health Hazard
- Chronic Health Hazard

SARA Title III Section 313 Reportable Substances
If listed below, components are subject to the reporting requirements of Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372:

- ethanediol; ethylene glycol
  CAS-No.  107-21-1

Toxic Substances Control Act (TSCA)
If listed below, non-proprietary substances are subject to export notification under Section 12 (b) of TSCA:

- None listed

State Regulations

California Proposition 65
A warning under the California Drinking Water Act is required only if listed below:

- None listed
International Chemical Inventory Status

Unless otherwise noted, this product is in compliance with the inventory listing of the countries shown below. For information on listing for countries not shown, contact the Product Regulatory Services Department.

- Europe (EINECS/ELINCS) Listed/registered
- USA (TSCA) Listed/registered
- Canada (DSL) Listed/registered
- Australia (AICS) Not listed/Not registered
- Japan (MITI) Not listed/Not registered
- Korea (TCCL) Not listed/Not registered
- Philippines (PICCS) Not listed/Not registered
- China Not listed/Not registered
- New Zealand Not listed/Not registered

16. OTHER INFORMATION

HMIS Ratings

<table>
<thead>
<tr>
<th>Health</th>
<th>Flammability</th>
<th>Physical Hazard</th>
</tr>
</thead>
<tbody>
<tr>
<td>2*</td>
<td>1</td>
<td>0</td>
</tr>
</tbody>
</table>

Further information

Changes since the last version are highlighted in the margin. This version replaces all previous versions.

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.