ISN: 1036644

Product Name(s): TOTAL

PRODUCT CODE: 04138

Date of MSDS: 1994-07-07

Manufacturer(s):

VARN PRODUCTS COMPANY, INC

115 Advance Boulevard
Brampton Ontario
Canada L6T 4H9
Telephone: 905-792-8900 (INFORMATION)

Emergency Telephone: 613-996-6666 (CANUTEC)

NOTE FROM VARN PRODUCTS COMPANY, INC: THE INFORMATION ON THIS MSDS IS BELIEVED TO BE ACCURATE AS OF THE DATE SHOWN IN SECTION I. SINCE THE USE OF THIS PRODUCT IS NOT IN THE CONTROL OF VARN, IT IS THE USER'S RESPONSIBILITY TO DETERMINE WHAT CONSTITUTES SAFE USAGE FOR A PARTICULAR PRODUCT. THIS FORM MAY BE REPRODUCED IN QUANTITIES NECESSARY TO MEET YOUR REQUIREMENTS.

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MATERIAL SAFETY DATA SHEET

TOTAL

SECTION I - PRODUCT IDENTIFICATION

PRODUCT NAME: TOTAL

PRODUCT CODE: 04138
PRODUCT USE: LITHOGRAPHIC FOUNTAIN CONCENTRATE
WHMIS CLASSIFICATION: D2A

DATE PRINTED: JULY 7, 1994
NAME OF PREPARER: VARN PRODUCTS CO.

SECTION II - HAZARDOUS INGREDIENTS

REPORTABLE COMPONENTS CASE NUMBER VAPOR PRESSURE WEIGHT

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS NUMBER</th>
<th>kPa Hg @ TEMP</th>
<th>PERCENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>ETHYLENE GLYCOL</td>
<td>107-21-1</td>
<td>.12</td>
<td>20 deg C</td>
</tr>
<tr>
<td>OSHA PEL: 50ppm</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ACGIH TLV: 50ppm, CEILING</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ORAL LD50 (RAT): 4700 mg/Kg</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DIETHYLENE GLYCOL ETHYL ETHER</td>
<td>111-90-0</td>
<td>0.01</td>
<td>20 deg C</td>
</tr>
<tr>
<td>OSHA PEL: N/E</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
ACGIH TLV: N/E
ORAL LD50 (RAT): 6500 mg/Kg

* Indicates chemical(s) which may be subject to reporting on the National Pollutant Release Inventory under Section 16 of the Canadian Environmental Protection Act.
THIS PRODUCT, AS SOLD, CONTAINS LESS THAN 0.3% NON-HAZARDS TRI-VALENT CHROMIUM. FOUNTAIN SOLUTIONS MADE WITH THIS CONCENTRATE TYPICALLY CONTAINS BETWEEN 20 AND 30 ppm OF CHROMIUM +3. N/E = Not Established, N/AV = Not Available. All ingredients listed on CEPA Domestic Substance List (DSL) and USEPA TSCA inventory.

SECTION III - PHYSICAL/CHEMICAL CHARACTERISTICS

BOILING POINT: 100.1 deg C
SPECIFIC GRAVITY (H2O=1): 1.11
VAPOR DENSITY: HEAVIER THAN AIR
EVAPORATION RATE: SLOWER THAN WATER
MATERIAL V.O.C.: 64 g/l
SOLUBILITY IN WATER: 100%
APPEARANCE AND ODOR: DARK BLUE-GREEN LIQUID - MILD ODOR
FREEZING POINT: <0 deg C
pH: >3
COEFFICIENT OF WATER/OIL DIST: NOT AVAILABLE
ODOR THRESHOLD >50 ppm

SECTION IV - FIRE AND EXPLOSION HAZARD DATA

FLASH POINT: NONE METHOD USED: NOT APPLICABLE
FLAMMABLE LIMITS IN AIR BY VOLUME - LOWER: N/A UPPER: N/A

EXTINGUISHING MEDIA: USE ANY EXTINGUISHING MEDIA.

SPECIAL FIREFIGHTING PROCEDURES
AS IN ANY FIRE, WEAR SELF-CONTAINED BREATHING APPARATUS, (MSHA APPROVED) AND FULL PROTECTIVE GEAR.

UNUSUAL FIRE AND EXPLOSION HAZARDS
NONE KNOWN.

T.D.G.R. CLASS: NOT REGULATED

SENSITIVITY TO IMPACT: THIS PRODUCT IS NOT SENSITIVE TO IMPACT.

SENSITIVITY TO STATIC DISCHARGE: THIS PRODUCT IS NOT SENSITIVE TO STATIC DISCHARGE.

SECTION V - REACTIVITY DATA

STABILITY: STABLE

CONDITIONS TO AVOID: AVOID CONDITIONS OF EXCESS HEAT TO PROLONG SHELF LIFE.

INCOMPATIBILITY (MATERIALS TO AVOID): AVOID MIXING WITH STRONG OXIDIZING MATERIALS.

HAZARDOUS DECOMPOSITION OR BYPRODUCTS: NONE KNOWN.

HAZARDOUS POLYMERIZATION: WILL NOT OCCUR

SECTION VI - HEALTH HAZARD DATA
INHALATION HEALTH RISKS AND SYMPTOMS OF EXPOSURE
NO HAZARD EXISTS IN NORMAL INDUSTRIAL USE.

SKIN AND EYE CONTACT HEALTH RISKS AND SYMPTOMS OF EXPOSURE
Prolonged or repeated contact with skin may cause irritation. Contact may cause eye irritation.

SKIN ABSORPTION HEALTH RISKS AND SYMPTOMS OF EXPOSURE
Skin contact may result in absorption but symptoms of toxicity are not anticipated by this route alone under normal conditions of use.

INGESTION HEALTH RISKS AND SYMPTOMS OF EXPOSURE
Ingredients to this product are toxic. Ingestion may cause nausea, severe gastro-intestinal irritation, diarrhea and possible damage to vital organs. Follow first aid procedures.

HEALTH HAZARDS (ACUTE AND CHRONIC)
This product may cause mild to moderate irritation upon contact with eyes and mild irritation to skin.

CARCINOGENICITY: This product contains no known carcinogens.

NTP CARCINOGEN: No

IARC MONOGRAPHS: No

OSHA REGULATED: No

TERATOGENICITY: Ethylene glycol has been identified as a probable birth defect hazard based on laboratory animal data.

MUTAGENICITY: This product contains no chemicals known to cause damage to chromosomes.

TOXICOLOGICALLY SYNERGISTIC PRODUCTS: There is no data available.

MEDICAL CONDITIONS GENERALLY AGGRAVATED BY EXPOSURE
Skin contact may aggravate pre-existing dermatitis.

EMERGENCY AND FIRST AID PROCEDURES:
EYES: Flush eyes with plenty of water while removing contact lenses. Hold eyelids open and continue flushing with water for 15 minutes. Seek medical attention if irritation persists.

SKIN: Wash with soap and water.

INHALATION: Not a normal route of entry

INGESTION: If victim is conscious, induce vomiting as directed by medical personnel. Obtain medical attention immediately.

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SECTION VII - PRECAUTIONS FOR SAFE HANDLING AND USE
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STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED
Soak up on absorbent or transfer liquid into a closed container for later disposal. Dike spill and keep from entering sewer.

WASTE DISPOSAL METHOD
This product, as supplied, becomes a waste it is regulated by the Canadian Environmental Protection Act as a special waste. Do not pour undiluted product, as supplied, down sewer. Contact a licensed hazardous waste hauler for more information.

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING
Store in a cool, dry area away from sunlight and excess heat. Protect from
FREEZING. AVOID SKIN AND EYE CONTACT.

OTHER PRECAUTIONS
 WHEN TRANSFERRING OR USING THIS PRODUCT, WEAR PROPER PERSONAL PROTECTIVE EQUIPMENT.

SECTION VIII - CONTROL MEASURES

RESPIRATORY PROTECTION
 NO SPECIAL PROTECTION IS REQUIRED UNDER NORMAL CONDITIONS OF USE.

VENTILATION
 GOOD GENERAL VENTILATION SHOULD BE SUFFICIENT TO CONTROL AIRBORNE LEVELS.

PROTECTIVE GLOVES
 NOT NECESSARY FOR NORMAL USE. FOR EXCESSIVE EXPOSURE USE BUTYL OR NITRILE RUBBER GLOVES.

EYE PROTECTION
 SAFETY GLASSES WITH SIDE SHIELDS.

OTHER PROTECTIVE CLOTHING OR EQUIPMENT
 NOT NECESSARY.

WORK/HYGIENIC PRACTICES
 AFTER USE OF THIS PRODUCT, WASH WITH SOAP AND WATER BEFORE EATING, DRINKING, SMOKING, OR USE OF TOILET FACILITIES.