

MATERIAL SAFETY DATA SHEET

SECTION 1 - CHEMICAL PRODUCT and COMPANY IDENTIFICATION

PRODUCT NAMES: TRAMFLOC[®] 1169, 1170

DATE ISSUED: 06/01/03

SUPERSEDES: 05/07/99

DESCRIPTION: Defoamer for mineral processing, hard rock mining, phosphate and mineral acid production.

COMPANY IDENTIFICATION:

Tramfloc, Inc.

P. O. Box 350

Tempe, AZ 85280-0350

480-491-6895

EMERGENCY TELEPHONE: 24 hours a day, 7 days a week; CHEMTREC, 800-424-9300

SECTION 2 - COMPOSITION/INFORMATION on INGREDIENTS

| CAS No. | Chemical Identity | Concentration, % wt. |
|-------------|----------------------|----------------------|
| Proprietary | polyoxy glycol ester | 40.0-49.9 |

No exposure guidelines have been established for these ingredients.

SECTION 3 - HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW - Hazy amber to clear liquid with mild organic odor. Slightly irritating to the eyes and skin. Can be irritating to the respiratory tract in large doses.

EFFECTS OF OVEREXPOSURE - EYES: May cause mild transient irritation resulting in redness and weeping.

EFFECTS OF OVEREXPOSURE - SKIN: May cause slight irritation with repeated contact.

EFFECTS OF OVEREXPOSURE - INHALATION: May be irritating to nose, mouth, throat and lungs.

EFFECTS OF OVEREXPOSURE - INGESTION: May result in nausea/intestinal discomfort and/or drowsiness.

EFFECTS OF OVEREXPOSURE - SENSITIZATION PROPERTIES: Unknown.

EFFECTS OF OVEREXPOSURE - CHRONIC HAZARDS: No adverse affects have been documented in humans as a result of chronic exposure.

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE: There is no evidence that this product aggravates an existing medical condition.

OTHER REMARKS: None.

SECTION 4 - FIRST AID MEASURES

INHALATION: If inhaled, remove to fresh air. If not breathing, clear person's airway and give artificial respiration. If breathing is difficult, medical personnel may administer oxygen. Get medical attention at once.

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SKIN: Remove contaminated clothing and launder before reuse. Wash effected area with soap and water for at least 15 minutes or until all traces of material are removed. Get medical attention if skin irritation develops or skin contact has been prolonged.

EYES: Immediately flush with plenty of water for at least 15 minutes with eyelids open. Call a physician.

INGESTION: Observe victim for nausea. Consult a physician if conditions persist. Do not induce vomiting or give anything by mouth to an unconscious or convulsing person. If conscious, give 2 glasses of water.

SECTION 5 - FIRE-FIGHTING MEASURES

IGNITION TEMPERATURE: NA. HMIS rating: Health: 1; Fire: 1; Reactivity: 0; Personal Protection: B

FLASHPOINT: >314⁰ F, PMCC; UNUSUAL OR EXPLOSIVE HAZARDS: None.

FLAMMABLE LIMITS % (Lower - Upper): Lower: ND; Upper: ND

RECOMMENDED FIRE EXTINGUISHING AGENTS AND SPECIAL PROCEDURES:

Use water spray, dry chemical, foam or CO₂ to extinguish flames. Water or foam may cause frothing. Toxic fumes may evolve on burning. Keep containers cool.

SPECIAL PROTECTIVE EQUIPMENT: Wear full protective clothing and positive pressure breathing apparatus.

SECTION 6 - ACCIDENTAL RELEASE MEASURES

PROCEDURES IN CASE OF ACCIDENTAL RELEASE OR LEAKAGE: Personal protective equipment must be worn. Ventilate area if spilled in a confined space. Contain spill with absorbent materials such as clay and shovel up. Spills are slippy. Clean promptly. Not a RCRA hazardous waste. Avoid skin and eye contact. Send to an approved landfill. Prevent runoff to streams and sewers. Observe local regulations.

SECTION 7 - HANDLING AND STORAGE

HANDLING: Minimum handling temperature of 40⁰ F should be maintained. Keep containers closed.

STORAGE: Periods of exposure to high temperatures should be minimized. Water contamination should be avoided.

SECTION 8 - EXPOSURE CONTROLS/ PERSONAL PROTECTION

PERSONAL PROTECTIVE EQUIPMENT: EYE/FACE PROTECTION: Avoid eye contact. Chemical type goggles, or face shield should be worn.

SKIN PROTECTION: Launder when work clothing is soiled. Workers should wash exposed skin with soap and water. Impervious gloves are recommended. Wear long sleeve shirts, chemical apron and approved boots.

RESPIRATORY PROTECTION: Airborne concentrations should be kept to lowest levels possible. If vapor, mist, or dust is generated and the occupational exposure limit of the product, or any component of the product, is

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exceeded, use appropriate NIOSH or MSHA approved air purifying or air supplied respirator after determining the airborne concentration of the contaminant. If concentration is unknown, wear air supplied respirators. Wear self contained breathing apparatus for cleaning up large spills or entering confined spaces.

VENTILATION: Use local exhaust ventilation to control mists. Additional ventilation may be required to keep concentration of product in air below recommended level.

EXPOSURE LIMIT FOR THE TOTAL PRODUCT: None established.

SECTION 9 - PHYSICAL and CHEMICAL PROPERTIES

PHYSICAL STATE, COLOR and ODOR: hazy amber to clear liquid with mild organic odor.

pH: ND. BOILING POINT: >545⁰ F MELTING/FREEZING POINT: NA

WATER SOLUBILITY (%): 0.1-1; SPECIFIC GRAVITY: 0.931 @ 20⁰ C VAPOR PRESSURE: ND. VAPOR DENSITY (Air=1): ND VISCOSITY: 500 cps at 77⁰ F.

VOC CONTENT: < 1%. SOLUBILITY IN WATER: Dispersible. OTHER: None

SECTION 10 - STABILITY and REACTIVITY

GENERAL: Product is stable at elevated temperatures and pressures.

INCOMPATIBILITY: Strong oxidizers.

HAZARDOUS POLYMERIZATIONS: DO NOT OCCUR. Thermal decomposition will occur and produce oxides of carbon.

SECTION 11 -TOXICOLOGICAL INFORMATION

ORAL TOXICITY: The LD₅₀ in rats is between 2000-5020 mg/kg based upon data from components or similar materials. Swallowing material may cause irritation of the gastrointestinal lining, nausea, vomiting, diarrhea, and abdominal pain.

EYE IRRITATION: May cause eye irritation. Product does not met Canadian D@B or EU R36 criteria based upon data from components or similar materials.

SKIN IRRITATION: Not expected to be a primary skin irritant based upon data from components or similar materials. Prolonged or repeated skin contact as from clothing wet with material may cause dermatitis. Symptoms may include redness, edema, drying, and cracking of the skin.

DERMAL TOXICITY: The LD₅₀ in rats is >2000 mg/kg based upon data from components or similar materials.

INHALATION TOXICITY: The following is based upon incomplete information about components. Aerosols of material are considered highly toxic based upon data from components or similar materials. Repeated exposure to respirable aerosols of a similar material produced lung injury in rats.

RESPIRATORY IRRITATION: May cause nose, throat and lung irritation based upon data from components or similar materials. Breathing of vapor or mist may aggravate asthma and inflammatory or fibrotic pulmonary disease. Exposure to high concentrations of material may cause lung damage.

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CHRONIC TOXICITY: There are no data to indicate that product or components present at > 1% are chronic health hazards.

CARCINOGENICITY: There are no data to indicate that product or components present at > 0.1% a carcinogenic hazard.

MUTAGENICITY: There are no data to indicate that product or components present at > 0.1% are mutagenic or genotoxic.

REPRODUCTIVE TOXICITY: There are no data to indicate that product or components present at > 0.1% may cause reproductive toxicity.

TERATOGENICITY: There are no data to indicate that product or components present at > 0.1% may cause birth defects.

SECTION 12 - DISPOSAL CONSIDERATIONS

WASTE DISPOSAL METHODS: This product has been evaluated for RCRA characteristics and does not meet the criteria of a hazardous waste if discarded in its purchased form. This product is not considered a hazardous waste under 40 CFR 261. Under RCRA, it is the responsibility of the user of the product to determine at the time of disposal, whether the product meets RCRA criteria for hazardous wastes. This is because product uses, transformations, mixtures, processes, etc. may render the resulting materials hazardous.

SECTION 13 - ECOLOGICAL INFORMATION

ENVIRONMENTAL TOXICITY: Freshwater Fish Toxicity: The acute EDC₅₀ for freshwater fish is 100-1000 ppm based on components data. No other types of environmental toxicity have been determined.

BIODEGRADATION: At least 25% of the components in material show limited biodegradation based on OECD 301-type test and 302-type test data.

BIOACCUMULATION: No such data are available.

SECTION 14 - TRANSPORTATION INFORMATION

A) NOT REGULATED, APPLICABLE OR DETERMINED: ICAO/IATA; IMDG (ambient); IMDG EMS; IMDG MFAG; USCG; US DOT bulk (ambient); US DOT non bulk; DOT NAERG; TDG bulk (ambient); TDG non bulk; Mexico; ADR/RID (ambient); ADR/RID Hazard ID No.; ADG (ambient);

B) DO NOT TRANSPORT; ADDITIONAL INFORMATION REQUIRED: IMDG (elevated); IMO Marine bulk; US DOT bulk (elevated); TDG bulk (elevated); ADR/RID (elevated); ADG (elevated);

SECTION 15 - REGULATORY INFORMATION

FEDERAL REGULATIONS:

SARA Title III: Section 313: This product does not contain any toxic chemicals subject to the reporting requirements of Section 313 of the Emergency Planning and Community Right to Know Act of 1986 and of 40 CFR 372. The product has no toxic chemicals as listed in 40CFR 355 used for SARA 302, 304, 311 and 312.

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States Right-to-Know Regulations: Chemical Name: None

State Right-to-Know

State list: CT, FL, IL, MI, LA, MA, NJ, PA, RI, CA

California Prop. 65: The following detectable components of this product are substances, or belonging to classes of substances, known to the State of California to cause cancer and/or toxicity or birth defects. None

INTERNATIONAL REGULATIONS:

TSCA INVENTORY STATUS: This product, or its components, are listed on, or are exempt from the Toxic Substance Control Act (TSCA) Chemical Substance Inventory published by the EPA.

WHMIS INVENTORY STATUS: NR

CANADIAN INVENTORY STATUS: This product, or its components, are listed on or are exempt from the Canadian Domestic Substance List (DSL).

EINECS INVENTORY STATUS: This product, or its components, are in compliance with the Seventh Amendment Directive 92/32/EEC. EINECS inventory as published by Worksafe Australia.

AUSTRALIAN INVENTORY STATUS: ND

JAPAN INVENTORY STATUS: ND

ENVIRONMENTAL INFORMATION:

AQUATIC TOXICITY: ND. MOBILITY: ND. PERSISTENCE AND BIODEGRADABILITY: ND.
POTENTIAL TO BIOACCUMULATE: ND.

SECTION 16 - OTHER INFORMATION

The information in this data sheet is provided independently of any sale of the product. It is provided for the purpose of hazard communication as part of Tramfloc's product safety program. It is intended only as a guide to the appropriate precautionary handling of the product by a properly trained person. You are encouraged and requested to advise those who may come in contact with such products of the information contained herein. The data relates only to the specific product designated, and does not relate to use of the product in combination with any other material or use of the product in any process. The data is not intended to constitute performance information concerning the product. No express warranty, or implied warranty or merchantability for fitness for a particular purpose is made with respect to the product, its composition, its safety or the information in this data sheet. To determine the applicability or the effects of law or regulation with respect to the product, the user should consult a legal advisor or the appropriate government agency. Tramfloc, Inc. does not undertake to furnish advice on such matters. No person or organization except a duly authorized Tramfloc, Inc. employee is authorized to provide or make available data sheets for Tramfloc, Inc. Data sheets from unauthorized sources may contain information that is no longer current or accurate. No part of this data sheet may be reproduced or transmitted, in any form, or by any means, without permission in writing from Tramfloc, Inc.