



SECTION 1. MATERIAL AND COMPANY IDENTIFICATION

PRODUCT NAME: TRIACOOL EG

VERSION: OCTOBER 2015

MANUFACTURER: PACIFIC FUNCTIONAL FLUIDS, LLC

2244 PORT OF TACOMA ROAD TACOMA, WA 98421-3607

CUSTOMER SERVICE: 253-284-4302 / 888-586-7295

EMERGENCY HEALTH AND SAFETY NUMBER: CHEMTREC: 1-800-424-9300

SECTION 2. HAZARDS IDENTIFICATION

THIS PRODUCT IS A "HAZARDOUS CHEMICAL" AS DEFINED BY THE OSHA HAZARD COMMUNICATION STANDARD, 29 CFR 1910.





DANGER! HARMFUL OR FATAL IF SWALLOWED (ORAL)

HAZARD STATEMENTS

H302: HARMFUL IF SWALLOWED

H313: MAY BE HARMFUL IN CONTACT WITH SKIN

H373: MAY CAUSE DAMAGE TO ORGANS THROUGH PROLONGED OR REPEATED EXPOSURE.

PRECAUTIONARY STATEMENTS

PREVENTION:

P261: AVOID BREATHING DUST, FUMES, GAS, MIST, VAPORS, SPRAY. **P270:** DO NOT EAT, DRINK, OR SMOKE WHEN USING THIS PRODUCT.

P264: WASH HANDS THOROUGHLY AFTER HANDLING.

P233: KEEP CONTAINER TIGHTLY CLOSED. **P102:** KEEP OUT OF REACH OF CHILDREN.

P301/P302: IF SWALLOWED IMMEDIATELY CALL A POISON CENTER.

EMERGENCY OVERVIEW

IMMEDIATE CONCERNS: MATERIAL IS MODERTELY TOXIC WHEN INJESTED. TAKE ADEQUATE PRECAUTIONS TO KEEP PEOPLE, ESPECIALLY CHILDREN, AWAY FROM SPILL SITE. PVC COATED RUBBER GLOVES AND MONOGOGGLES OR FACE SHEILD CAN BE USED DURING CLEANUP OF SPILL SITE.

POTENTIAL HEALTH EFFECTS:

EYE: MAY CAUSE PAIN, TRANSIENT IRRITATION AND SUPERFICIAL CORNEAL EFFECTS. CORNEAL INJURY IS UNLIKELY. VAPOR OR MIST MAY CAUSE EYE IRRITATION.

SKIN: BRIEF CONTACT IS NON-IRRITATING. PROLONGED OR REPEATED EXPOSURE IS LIKELY TO CAUSE SKIN IRRITATION. ADVERSE EFFECTS ARE NOT EXPECTED FROM BRIEF CONTACT.

INGESTION: LIQUID IS MODERATELY TOXIC AND MAY BE HARMFUL IF SWALLOWED. EXCESSIVE EXPOSURE MAY CAUSE CENTRAL NERVOUS SYSTEM EFFECTS, CARDIOPULMONARY EFFECTS, AND KIDNEY FAILURE. SMALL AMOUNTS SWALLOWED INCIDENTAL TO NORMAL HANDLING OPERATIONS ARE NOT LIKELY TO CAUSE INJURY; HOWEVER, SWALLOWING AMOUNTS LARGER THAN THAT MAY CAUSE SERIOUS INJURY, EVEN DEATH.

SKIN ABSORPTION: BRIEF CONTACT UNLIKELY TO RESULT IN ABSORPTION OF HARMFUL AMOUNTS. REPEATED SKIN EXPOSURE TO LARGE AMOUNTS MAY RESULT IN ABSORPTION OF HARMFUL AMOUNTS. MASSIVE CONTACT WITH DAMAGED SKIN OR OF MATERIAL SUFFICIENTLY HOT TO BURN SKIN MAY RESULT IN ABSORPTION POTENTIALLY LETHAL AMOUNTS

INHALATION: AT ROOM TEMPERATURE, EXPOSURES TO VAPORS ARE MINIMAL DUE TO PHYSICAL PROPERTIES; HIGHER TEMPERATURES MAY GENERATE VAPOR LEVELS SUFFICIENT TO CAUSE ADVERSE EFFECTS.

MEDICAL CONDITIONS AGGRAVATED: PREEXISTING DISEASES IN OR HISTORY OF AILMENTS INVOLVING SKIN, CENTRAL NERVOUS SYSTEM, LIVER, AND KIDNEY.

SECTION 3. COMPOSITION / INFORMATION ON INGREDIENTS

CHEMICAL NAME	CAS#	PERCENT
ETHYLENE GLYCOL	107-21-1	>98.0

SEE SECTION 8 FOR EXPOSURE LIMITS

SECTION 4. FIRST AID MEASURES

EYE: IRRIGATE WITH FLOWING WATER IMMEDIATELY AND CONTINUOUSLY FOR SEVERAL MINUTES. REMOVE CONTACT LENSES, IF WORN, AFTER INITIAL 1-2 MINUTES OF FLUSHING. (CONTACT LENSES SHOULD NOT BE WORN WHEN WORKING WITH THIS PRODUCT). THEN CONTINUE TO FLUSH FOR SEVERAL MINUTES. CONSULT MEDICAL PERSONNEL IF IRRITATION PERSISTS.

SKIN: REMOVE CONTAMINATED CLOTHING AND SHOES. WASH WITH SOAP AND WATER FOR SEVERAL MINUTES. CONSULT MEDICAL PERSONNEL IF IRRITATION PERSISTS. DISPOSE OF CONTAMINATED CLOTHING.

INGESTION: CALL POISON CENTER IMMEDIATELY. GET MEDICAL ATTENTION IMMEDIATELY. INDUCE VOMITING AS INSTRUCTED BY MEDICAL PERSONNEL. RINSE MOUTH. NEVER GIVE ANYTHING BY MOUTH TO AN UNCONSCIOUS PERSON. NOTE TO PHYSICIAN: IMMEDIATE ATTENTION IS REQUIRED.

INHALATION: IF IRRITATION, NAUSEA, DROWSINESS OR HEADACHES OCCUR, REMOVE TO FRESH AIR. IF BREATHING IS DIFFICULT, OXYGEN SHOULD BE ADMINISTERED BY QUALIFIED MEDICAL PERSONNEL. CALL A PHYSICIAN OR TRANSPORT TO A MEDICAL FACILITY IF CONDITIONS PERSIST.

SIGNS AND SYMPTOMS OF OVEREXPOSURE:

ACUTE TOXICITY: REDNESS OF THE SKIN OR EYES. REPEATED EXCESSIVE EXPOSURE MAY CAUSE SEVERE KIDNEY DAMAGE, AND ALSO LIVER AND GASTROINTESTINAL EFFECTS. SIGNS AND SYMPTOMS OF EXCESSIVE EXPOSURE MAY BE CENTRAL NERVOUS SYSTEM EFFECTS. SIGNS AND SYMPTOMS OF EXCESSIVE EXPOSURE MAY BE NAUSEA AND/OR VOMITING. SIGNS AND SYMPTOMS OF EXCESSIVE EXPOSURE MAY BE ANESTHETIC OR NARCOTIC EFFECTS. OBSERVATIONS IN ANIMALS INCLUDE FORMATION OF BLADDER STONES AFTER REPEATED ORAL DOSES OF ETHYLENE GLYCOL. REPORTS OF KIDNEY FAILURE AND DEATH IN BURN PATIENTS SUGGEST THE ETHYLENE GLYCOL MAY HAVE BEEN A FACTOR. THE USE OF TOPICAL APPLICATIONS CONTAINING THIS MATERIAL MAY NOT BE APPROPRIATE IN SEVERELY BURNED PATIENTS OR INDIVIDUALS WITH IMPAIRED RENAL FUNCTION.

SECTION 5. FIREFIGHTING MEASURES

EXTINGUISHING MEDIA: TO EXTINGUISH COMBUSTIBLE RESIDUES OF THIS PRODUCT USE WATER FOG, CARBON DIOXIDE, DRY CHEMICAL, OR ALCOHOL RESISTANT FOAM (ATC TYPE). DO NOT USE WATER STREAM.

FIREFIGHTING INSTRUCTIONS: EVACUATE AREA AND KEEP PEOPLE AWAY. USE WATER SPRAY TO COOL FIRE EXPOSED CONTAINERS AND FIRE AFFECTED ZONE UNTIL FIRE IS OUT AND DANGER OF REIGNITION HAS PASSED. TO EXTINGUISH COMBUSTIBLE RESIDUES OF THIS PRODUCT USE WATER FOG, CARBON DIOXIDE, DRY CHEMICAL, OR FOAM. DO NOT USE DIRECT WATER STREAM AS IT MAY SPREAD FIRE.

SPECIAL PROTECTIVE EQUIPMENT FOR FIREFIGHTERS: WEAR POSITIVE PRESSURE SELF CONTAINED BREATHING APPARATUS (SCBA) AND PROTECTIVE FIRE FIGHTING CLOTHING (INCLUDES FIRE FIGHTING HELMET, COAT, TROUSERS, BOOTS, AND GLOVES). IF PROTECTIVE EQUIPMENT IS NOT AVAILABLE OR NOT USED, FIGHT FIRE FROM A PROTECTED LOCATION OR SAFE DISTANCE.

HAZARDOUS COMBUSTION PRODUCTS: COMBUSTION MAY YIELD SMOKE WHICH MAY CONTAIN UNIDENTIFIED TOXIC AND/OR IRRITATING COMPOUNDS, CARBON MONOXIDE, AND CARBON DIOXIDE. PRODUCT WILL BURN. RESIDUE CAN BURN.

SECTION 6. ACCIDENTAL RELEASE MEASURES

PERSONAL PRECAUTIONS: KEEP UNNECESSARY AND UNPROTECTED PERSONNEL FROM ENTERING THE AREA. USE APPROPRIATE SAFETY EQUIPMENT. FOR ADDITIONAL INFORMATION, REFER TO SECTION 8, EXPOSURE CONTROLS AND PERSONAL PROTECTION.

ENVIRONMENTAL PRECAUTIONS: STOP SPILL/RELEASE IF IT CAN BE DONE SAFELY. PREVENT SPILLED MATERIAL FROM ENTERING SOIL, SEWERS, STORM DRAINS, OTHER UNAUTHORIZED DRAINAGE SYSTEMS AND NATURAL WATERWAYS. USE WATER SPARINGLY TO MINIMIZE ENVIRONMENTAL CONTAMINATION AND REDUCE DISPOSAL REQUIREMENTS. **SEE SECTION 12, ECOLOGICAL INFORMATION.**

METHODS FOR CONTAINMENT AND CLEAN-UP: FOR LARGES SPILLS/RELEASES, NOTIFY RELEVANT AUTHORITIES IN ACCORDANCE WITH ALL APPLICABLE REGULATIONS. IMMEDIATE CLEANUP OF ANY SPILL IS RECOMMENDED. DIKE FAR AHEAD OF SPILL FOR LATER RECOVERY OR DISPOSAL. ABSORB SPILL WITH INERT MATERIAL SUCH AS SAND, VERMICULITE OR KITTY LITTER AND PLACE IN SUITABLE CONTAINER FOR DISPOSAL.

SEE SECTION 13 DISPOSAL CONSIDERATIONS FOR ADDITIONAL INFORMATION.

SECTION 7. HANDLING AND STORAGE

SAFE HANDLING: SPILLS WILL PRODUCE EXTREMELY SLIPPERY SURFACES. DISPOSE OF CONTAMINATED CLOTHING OR SHOES.

STORAGE: DO NOT STORE IN GALVANIZED STEEL, OPENED, OR UNLABELED CONTAINERS. STORE IN CARBON STEEL, STAINLESS STEEL, OR ORIGINAL CONTAINERS. KEEP CONTAINER(S) TIGHTLY CLOSED AND PROPERLY LABELED. USE AND STORE THIS MATERIAL IN COOL, DRY, WELL-VENTILATED AREA AWAY FROM HEAT AND ALL SOURCES OF IGNITION. STORE ONLY IN APPROVED CONTAINERS. KEEP AWAY FROM ANY INCOMPATIBLE MATERIAL. PROTECT CONTAINER(S) AGAINST PHYSICAL DAMAGE.

"EMPTY" CONTAINERS RETAIN RESIDUE AND MAY BE DANGEROUS. DO NOT PRESSURIZE, CUT, WELD, BRAZE, SOLDER, DRILL, GRIND OR EXPOSE SUCH CONTAINERS TO HEAT, FLAME, SPARKS OR OTHER SOURCES OF IGNITION. ALL EMPTY CONTAINERS SHOULD BE DISPOSED OF IN AN ENVIRONMENTALLY SAFE MANNER AND IN ACCORDANCE WITH GOVERNMENTAL REGULATIONS.

SECTION 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

EXPOSURE LIMITS:

CHEMICAL NAME	ACGIH TLV	OSHA PEL		
1,2 ETHANE DIOL	100 MG/M3 AEROSOL; CEILING LIMIT	CLV: 50 PPM; 125MG/M3		

ENGINEERING CONTROLS:

PROVIDE GENERAL VENTILATION NEEDED TO MAINTAIN AIRBORNE CONCENTRATION BELOW ESTABLISHED EXPOSURE LIMITS. WHEN GENERAL VENTILATION IS UNAVOIDABLE, ADDITIONAL ENGINEERING CONTROLS MAY BE REQUIRED.

PERSONAL PROTECTIVE EQUIPMENT; RESPIRATORY:

WEAR A NIOSH CERTIFIED (OR EQUIVALENT) ORGANIC VAPOR/PARTICULATE RESPIRATOR. OBSERVE OSHA REGULATIONS FOR RESPIRATOR USE (29CFR 1910.134).

PERSONAL PROTECTIVE EQUIPMENT; EYES/FACE:

GOOD INDUSTRIAL HYGIENE PRACTICE SUGGESTS THE USE OF SAFETY GLASSES/FACE SHIELDS THAT MEET OR EXCEEDS ANSI Z.87.1 WHENEVER WORKING WITH CHEMICALS. USE OF CONTACTS NOT RECOMMENDED.

PERSONAL PROTECTIVE EQUIPMENT: SKIN/HAND:

GOOD INDUSTRIAL HYGIENE PRACTICE SUGGESTS THE USE OF CHEMICAL IMPERVIOUS GLOVES OR OTHER APPROPRIATE SKIN PROTECTION WHEN WORKING WITH CHEMICALS. NITRILE IS SUGGESTED PROTECTIVE MATERIAL. TO AVOID PROLONGED OR REPEATED CONTACT WEAR APPROPRIATE CHEMICAL RESISTANT FACE SHIELD, BOOTS, APRON, WHOLE BODY SUITS, OR OTHER PROTECTIVE CLOTHING.

PERSONAL PROTECTIVE EQUIPMENT; PERSONAL HYGIENE:

USE GOOD PERSONAL HYGIENE. WASH THOROUGHLY WITH SOAP AND WATER AFTER HANDLING PRODUCT AND BEFORE EATING, DRINKING, OR USING TOBACCO PRODUCTS. CLEAN CONTAMINATED CLOTHING, SHOES, AND PROTECTIVE EQUIPMENT BEFORE REUSING. DISCARD LEATHER ARTICLES SATURATED WITH PRODUCT.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL STATE: LIQUID

APPEARANCE: CLEAR, COLORLESS

ODOR: ODORLESS

PH: 9.0 @ 50% GLYCOL SOLUTION VAPOR PRESSURE: .06 MM HG @ 20° C

VAPOR DENSITY: 2.1 (AIR=1)

EVAPORATION RATE: NOT AVAILABLE.

BOILING POINT: 150° C

MELTING POINT: -15° C (-3° F)

AUTO IGNITION TEMPERATURE: 375° C

FLASH POINT: 111° C (231.80° F)

DECOMPOSITION TEMPERATURE: NOT AVAILABLE.

SOLUBILITY: SOLUBLE IN WATER

SPECIFIC GRAVITY/DENSITY: 1.1250 - 1.1350

SECTION 10. STABILITY AND REACTIVITY

STABILITY: STABLE IN CLOSED CONTAINERS UNDER NORMAL STORAGE AND HANDLING CONDITIONS.

INCOMPATIBILITY: ISOLATE FROM STRONG OXIDIZERS SUCH AS PERMANGANATES, CHROMATES, AND PEROXIDES. KEEP AWAY FROM ALKALI, ALKALINE EARTH METAL, ALDEHYDES, AND ALUMINUM COMPOUNDS.

HAZARDOUS DECOMPOSITION PRODUCTS: CARBON MONOXIDE, NITROGEN OXIDES, IRRITATING AND TOXIC FUMES, GASES, CARBON DIOXIDE, AND UNIDENTIFIED ORGANIC COMPOUNDS.

HAZARDOUS POLYMERIZATION: HAS NOT BEEN REPORTED. SHOULD NOT OCCUR UNDER NORMAL CONDITIONS.

CONDITIONS TO AVOID: AVOID SPARKS, FLAMES, MOISTURE AND INCOMPATIBLE MATERIALS. AVOID EXTENDED EXPOSURE TO HIGH TEMPERATURES AS THIS CAN CAUSE DECOMPOSITION.

SECTION 11. TOXICOLOGICAL INFORMATION

ACUTE

DERMAL LD50: 9530 MG/KG (RABBIT)

NOTES: ETHYLENE GLYCOL LOWEST KNOWN LD50 (SKIN) DATA.

ORAL LD50: 5840 MG/KG (RAT)

NOTES: ETHYLENE GLYCOL LOWEST KNOWN LD50 (ORAL) DATA.

NOTES: ETHYLENE GLYCOL IS MODERATELY TOXIC WHEN INGESTED. THE LETHAL DOSE IN HUMANS IS ESTIMATED TO BE 100 ML (3 OUNCES). THE LD 50 FOR RATS IS IN THE 5840 – 13,000 MG/KG RANGE.

EYE EFFECTS: EYE IRRITATION FOR ETHYLENE GLYCOL: MILD (RABBIT).

SKIN EFFECTS: SKIN IRRITATION FOR ETHYLENE GLYCOL: MILD (RABBIT).

REPRODUCTIVE EFFECTS: ETHYLENE GLYCOL HAS NOT INTERFERED WITH REPRODUCTION IN ANIMAL STUDIES EXCEPT AT VERY HIGH DOSES.

MUTAGENICITY: MUTAGENICITY (EFFECTS ON GENETIC MATERIAL): RESULTS OF IN VITRO MUTAGENICITY STUDIES HAVE BEEN NEGATIVE FOR ETHYLENE GLYCOL. ANIMAL MUTAGENICITY STUDIES WERE NEGATIVE.

SECTION 12. ECOLOGICAL INFORMATION

TOXICITY TO FISH: LC50 (96 H) 72,860 MG/L, PIMEPHALES PROMELAS (EPA 72-1, STATIC)

AQUATIC INVERTEBRATES: EC50 (48 H) > 100MG/L, DAPHNIA MAGNA (OECD GUIDELINE 202, PART 1, STATIC) AQUATIC PLANTS: EC50 (96 H) 6500 – 13000 MG/L (GROWTH RATE), SLENASTRUM CAPRICORUTUM CHRONIC TOXICITY TO FISH: NO OBSERVED EFFECT CONCENTRATION (7 D) 15380 MG/L, PIMEPHALES

PROMELAS.

CHRONIC TOXICITY TO AQUATIC INVERTEBRATES: NO OBSERVED EFFECT CONCENTRATION (7 D) 8590 MG/L, CERIODAPHNIA SP.

ASSESSMENT OF TERRESTRIAL TOXICITY: STUDY SCIENTIFICALLY NOT JUSTIFIED.

MICROORGANISMS/EFFECT ON ACTIVATED SLUDGE

TOXICITY TO MICROORGANISMS:

DIN EN ISO 8192 AEROBIC

ACTIVATED SLUDGE, DOMESTIC/EC20 (30MIN): >1995MG/L

THE PRODUCT HAS NOT BEEN TESTED. THE STATEMENT HAS BEEN DERIVED FROM SUBSTANCES/ PRODUCTS OF A SIMILAR STRUCTURE OR COMPOSITION.

PERSISTENCE AND DEGRADABILITY

ASSESSMENT BIODEGRADATION AND ELIMINATION (H2O):

READILY BIODEGRADABLE (ACCORDING TO OCED CRITERIA).

ELIMINATION INFORMATION

90 - 100 % DOC REDUCTION (10 D) (OECD 301 A (NEW VERSION)) (AEROBIC, ACTIVATED SLUDGE, DOMESTIC)

ASSESSMENT OF STABILITY IN WATER:

ACCORDING TO STRUCTURAL PROPERTIES, HYDROLYSIS IS NOT EXPECTED/PROBABLE.

BIO ACCUMULATIVE POTENTIAL

ASSESSMENT BIOACCUMULATION POTENTIAL:

BECAUSE OF THE N-OCTANOL WATER DISTRIBUTION COEFFICIENT (LOG POW) ACCUMULATION IN ORGANISMS IS NOT TO BE EXPECTED.

MOBILITY IN SOIL

ASSESSMENT TRANSPORT BETWEEN ENVIRONMENTAL COMPARTMENTS:

THE SUBSTANCE WILL NOT EVAPORATE INTO THE ATMOSPHERE FROM THE WATER SURFACE. ADSORPTION TO SOLID SOIL PHASE IS NOT EXPECTED.

SECTION 13. DISPOSAL CONSIDERATIONS

WASTE DISPOSAL OF SUBSTANCES:

DO NOT DISCHARGE INTO WATERWAYS OR SEWER SYSTEMS WITHOUT PROPER AUTHORIZATION. DISPOSE OF IN A LICENSED FACILITY. DISPOSE OF IN ACCORDANCE WITH NATIONAL, STATE, AND LOCAL REGULATIONS.

CONTAINER DISPOSAL:

DISPOSE OF IN A LICENSED FACILITY. MAKE SURE CONTAINER IS EMPTY BEFORE RELEASING TO FACILITY.

SECTION 14. TRANSPORT INFORMATION

	US DOT	IATA	IMDG	IMO	CANADA TDG
SHIPPING NAME:	ENVIRONMENTALLY HAZARDOUS SUBSTANCES, LIQUID, N.O.S. (ETHYLENE GLYCOL)		NOT CLASSIFIED AS DANGEROUS UNDER IMDG REGULATIONS		NO INFORMATION AVAILABLE.
HAZARD CLASS:	9				
UN NUMBER:	3082				
PACKING GROUP:	III				

HAZARDOUS SUBSTANCE/MATERIAL RQ = ETHYLENE GLYCOL (5,000 LB.) EMERGENCY RESPONSE GUIDE = 171

SECTION 15. REGULATORY INFORMATION

US FEDERAL

TSCA

CAS# 107-21-1 IS LISTED ON THE TSCA INVENTORY.

SARA

SECTION 302/304 (RQ):

CAS# 107-21-1: FINAL RO = 5000 POUNDS (2270 KG)

SARA 311/312 HAZARD CATEGORIES:

CAS # 107-21-1: ACUTE, CHRONIC.

SECTION 313

THIS MATERIAL CONTAINS ETHYLENE GLYCOL (CAS# 107-21-1, 99 0%), WHICH IS SUBJECT TO THE REPORTING REQUIREMENTS OF **SECTION 313** OF SARA TITLE III AND 40 CFR PART 373.

CLEAN AIR ACT

CAS# 107-21-1 IS LISTED AS A HAZARDOUS AIR POLLUTANT (HAP).

CERCLA RQ: 5,000 LBS.

NFPA HAZARD CODES:

HEALTH: 2 FIRE: 1 REACTIVITY: 0 SPECIAL:

HMIS III RATING:

HEALTH: 2 FLAMMABILITY: 1 PHYSICAL HAZARD: 0

SECTION 16. OTHER INFORMATION

USER ASSUMES ALL RISKS INCIDENT TO THE USE OF THIS PRODUCT. TO THE BEST OF OUR KNOWLEDGE, THE INFORMATION CONTAINED HEREIN IS ACCURATE. HOWEVER, PACIFIC FLUIDS LLC ASSUMES NO LIABILITY WHATSOEVER FOR THE ACCURACY OR COMPLETENESS OF THE INFORMATION CONTAINED. NO REPRESENTATIONS OR WARRANTIES, EITHER EXPRESSED OR IMPLIED, ARE MADE WITH RESPECT TO INFORMATION OR PRODUCT TO WHICH INFORMATION REFERS. THE DATA CONTAINED ON THIS SHEET SPECIFIC TO THE PRODUCT SUPPLIED TO THE USER.