

TEXACO INC.
INDUSTRIAL HYGIENE, TOXICOLOGY, AND MATERIAL
SAFETY DATA SHEET



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NOTE: NO REPRESENTATION IS MADE AS TO THE ACCURACY OF THE INFORMATION
HEREIN. SEE PAGE 5 FOR CONDITIONS UNDER WHICH DATA ARE FURNISHED.

#36044 & 36045

36045

Trade Name and Synonyms	
02055 STARTEX ANTI-FREEZE AND SUMMER COOLANT	
Manufacturer's Name	Emergency Telephone No.
Texaco Inc	(914) 831-3400 ext. 406
Address	
P.O. Box 509 Beacon, NY 12508	
Chemical Name and/or Family or Description	
Antifreeze	
THIS PRODUCT IS CLASSIFIED AS: _____ NOT HAZARDOUS: _____	
<input checked="" type="checkbox"/> HAZARDOUS BY DEFINITION NO.(S) 2 ON ATTACHED EXPLANATION SHEETS	
WARNING STATEMENT: WARNING: HARMFUL OR FATAL IF SWALLOWED KEEP OUT OF REACH OF CHILDREN MAY CAUSE IRRITATION TO EYES	
OCCUPATIONAL CONTROL PROCEDURES	
Protective Equipment (Type)	
Eyes:	Chemical type goggles or face shield optional.
Skin:	Exposed employes should exercise reasonable personal cleanliness; this includes cleansing exposed skin areas several times daily with soap and water, and laundering or dry cleaning soiled work clothing at least weekly.
Inhalation:	Supplied air positive-pressure full-facepiece respirators in emergencies, cleaning spills, entry into tanks, confined spaces.
Ventilation:	Normal
Permissible Concentrations:	
Air:	10mg/cubic meter for particulate mist; 50 ppm(125mg/cubic meter) ceiling limit for ethylene glycol (ACGIH 1984-85).
EMERGENCY AND FIRST AID PROCEDURES	
First Aid	
Eyes:	Flush with water for fifteen minutes.
Skin:	Wash exposed areas with soap and water.
Ingestion:	Give large quantities of water, then induce vomiting immediately. Get immediate medical attention. Do not make an unconscious person vomit. Never give anything by mouth to an unconscious person.
Inhalation:	Remove to fresh air; if not breathing apply artificial respiration. Get medical attention. Keep affected person warm and at rest.
Other Instructions:	None.

N.D. - Not Determined N.A. - Not Applicable
< Less Than > Greater Than



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PHYSIOLOGICAL EFFECTS:	Code No. <u>02055</u>
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Effects of Exposure

Acute:

Eyes: Believed to cause slight eye irritation.

Skin: Believed to be slightly irritating upon prolonged contact.

Respiratory System: Drowsiness, narcosis, and unconsciousness possible upon exposure to high concentrations in poorly ventilated confined spaces.

Chronic: Liver and kidney damage in 2 year rat feeding study using 1-2% ethylene glycol.

Other: See Additional Comments.

Sensitization Properties:

Skin: Yes No Unknown

Respiratory: Yes No Unknown

Median Lethal Dose (LD₅₀ LC₅₀) (Species)

Oral Believed to be 4.7-8.5 g/kg (rat); moderately toxic

Inhalation N.D.

Dermal Believed to be 1-3 g/kg (rabbit); slightly toxic

Other N. D.

Irritation Index, Estimation of Irritation (Species)

Skin Believed to be 0.5-1.0/8.0 (rabbit); slightly irritating

Eyes Believed to be 15-25/110 (rabbit); slightly irritating

Symptoms of Exposure See above and Additional Comments pg. 4.

FIRE PROTECTION INFORMATION

Ignition Temp. F. N.D.

Flash Point F. (Method) 240 F (COC)

Flammable Limits% Lower 3.2

Upper N.D.

Products Evolved When Subjected to Heat or Combustion:

Carbon monoxide and carbon dioxide may be formed on burning in limited air supply.

Recommended Fire Extinguishing Agents And Special Procedures:

According to the National Fire Protection Association Guide, use water spray, dry chemical, foam, or carbon dioxide.

Water or foam may cause frothing. Use water to cool fire-exposed containers. If a leak or spill has not ignited, use water spray to disperse the vapors and to provide protection for persons attempting to stop the leak.

Unusual or Explosive Hazards:

None.



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ENVIRONMENTAL PROTECTION	Code No. 02055
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Waste Disposal Method:
 Under RCRA, it is the responsibility of the user of products to determine, at the time of disposal, whether product meets RCRA criteria for hazardous waste. This is because product uses, transformations, mixture, processes, etc. may render the resulting material hazardous. (See Remarks for Waste Classification.)

Procedures in Case of Breakage or Leakage:
 Contain spill if possible. Wipe up or absorb on suitable material and shovel up.

Remarks:
 Waste Classification: Product has been evaluated for RCRA characteristics and does not meet criteria of a hazardous waste if discarded in its purchased form.

PRECAUTIONS

**WARNING: HARMFUL OR FATAL IF SWALLOWED
 KEEP OUT OF REACH OF CHILDREN
 MAY CAUSE IRRITATION TO EYES**

Do not drink antifreeze or solution.
 Avoid contact with eyes.
 Wash thoroughly after handling.
 Do not store in open or unlabeled containers.
 ETHYLENE GLYCOL BASE.

Requirements for Transportation, Handling and Storage:
 Minimum feasible handling temperatures should be maintained. Periods of exposure to high temperatures should be minimized. Water contamination should be avoided.

DOT Proper Shipping Name: **N.A.**
 DOT Hazard Class (if applicable): **N.A.**

CHEMICAL AND PHYSICAL PROPERTIES

Boiling Point (°F) 388 Vapor Pressure <0.1 (mmHg)
 Specific Gravity 1.13 (H₂O=1) Vapor Density 2.14 (Air=1)
 Appearance and Odor Fluorescent green liquid; mild odor
 pH of undiluted product 10.8 Solubility Sol.
 Percent Volatile by Volume nil. Evaporation <1 (%)
 Viscosity 20 cP @ 20 C Other -

Hazardous Polymerizations Occur X Do not occur
 The Material Reacts Violently With: (If others is checked below, see additional comments on page 4 for further details)
 Air Water Heat Strong Oxidizers Others None of These
X

N.D. - Not Determined N.A. - Not Applicable
 < Less Than > Greater Than



COMPOSITION	Code No. 02055
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Components Presenting a Significant Hazard	%
Ethylene glycol (C.A.S. No. 107-21-1)	Greater than 95

Other Components	%
Water	1 - 5
Additive package containing: sodium, silicon	Less than 1
Additive package containing: phosphorous	Less than 1
tolyltriazole	Less than 1
Additive package containing: sodium	Less than 1
Additive package containing: sodium, nitrogen	Less than 1
Additive package containing: boron, chlorine, sodium	1 - 5

ADDITIONAL COMMENTS

TEXACO INTENDS TO COMPLY FULLY WITH PROVISIONS OF THE TOXIC SUBSTANCES CONTROL ACT STATE OF MICHIGAN CRITICAL MATERIALS ACT (REVISED 1984)
No critical materials present.
Lethal dose (human) 1.0-1.5 g/kg. Symptoms of ingestion: Behavioral changes, drowsiness, vomiting, diarrhea, extreme thirst, convulsions, cyanosis, rapid heart rate, pulmonary edema and renal failure. This product, when introduced into water systems will be degraded biologically in both surface waters and waste treatment plants, and would therefore present no aquatic toxicity.

To determine applicability or effect of any law or regulation with respect to this product, user should consult his legal advisor or the appropriate government agency. Texaco does not undertake to furnish advice on such matters.

By R. T. Richards Title Mgr. Env. Conservation & Toxicology
Date 11-28-84 New Revised, Supersedes 01-07-83

N.D. - Not Determined N.A. - Not Applicable
< Less Than > Greater Than



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EXPLANATION OF THE INDUSTRIAL HYGIENE TOXICOLOGY, AND MATERIAL SAFETY DATA SHEET

PRODUCT INFORMATION

Trade Name and Synonyms

Refer to the code number and name under which the product is marketed and the common commercial name of the product.

Manufacturer's Name and Address Self explanatory.

Chemical Name and/or Family or Description

Refer to chemical, generic, or descriptive name of single elements and compounds.

For purposes of this form, a product is defined as hazardous if it possesses one or more of the following characteristics: (1) has a flash-point below 200 degrees Fahrenheit, closed cup or subject to spontaneous heating; (2) has a threshold limit value below 500 ppm gases and vapor below 5 mg/m³ for dust, fumes and mist, and below 25 MPPCF for mineral dust; (3) a single dose oral LD50 below 500 mg/kg; (4) causes burns to the skin in the short-term exposure or is systemically toxic by skin contact; (5) has been demonstrated to be a skin or eye irritant or causes respiratory irritation; (6) may cause skin or respiratory sensitization; (7) has teratogenic, mutagenic or other toxic effects; (8) may cause asphyxia or pneumoconiosis; (9) in the course of normal operations may produce dusts, gases, fumes, vapor, mist, or smoke which have one or more of the above characteristics; (10) is hazardous according to OSHA 1910.1200(g)(2)(viii).

OCCUPATIONAL CONTROL PROCEDURES

(Consult your Industrial Hygienist or Occupational Health Specialist.)

Protective Equipment

Type of protective equipment that is necessary for the safe handling and use of this product.

Ventilation

Normal means adequate to maintain permissible concentrations.

Ventilation: type, i.e. local exhaust, mechanical, etc.

Permissible Concentrations

Indicates Threshold Limit Value (TLV) and / or Time Weighted Average (TWA) as established by the American Conference of Governmental Industrial Hygienists and/or standards promulgated by the Occupational Safety and Health Administration.

EMERGENCY AND FIRST AID PROCEDURES

Give first aid and emergency procedures in case of eye and/or skin contact, ingestion and inhalation.

PHYSIOLOGICAL EFFECTS

Acute Exposures (Eye, Skin, Respiratory System)

Refers to the most common effects that would be expected to occur from direct contact with the product.

Chronic

Refers to the effects that are most likely to occur from repeated or prolonged exposure.

Sensitizer

Means a substance which will cause on or in normal living tissue, through an allergic or photodynamic process, a hypersensitivity which becomes evident on reapplication of, or exposure to, the same substance.

Median Lethal Dose or Concentration (LD50, LC50)

Refers to that dose or concentration of the material which will produce death in 50 per cent of the animals. For inhalation, exposure time is indicated.

Irritation Index

Refers to an empirical score (Draize Method) for eye and skin irritation which tested by the method described. If numbers are not available, a yes or no answer indicates whether or not the material is an irritant.

FIRE PROTECTION INFORMATION

Ignition Temperature

Refers to the temperature in degrees Fahrenheit, at which a liquid will give off enough flammable vapor to ignite and burn continuously for 5 seconds.

Flash Point (State Method used)

Refers to the temperature in degrees Fahrenheit, at which a liquid will give off enough flammable vapor to ignite.

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Flammable Limits

Refers to the range of gas or vapor concentration (percent by volume in air) which will burn or explode if an ignition source is present. Lower means the the lower flammable limit and upper means the upper flammable limit given in percent.

Products Evolved When Subjected to Heat or Combustion

The products evolved when this material is subjected to heat or combustion. Includes temperature at which oxidation or other forms of degradation occurs.

Recommended Fire Extinguishing Agents and Special Procedures

Specifies the fire fighting agents that should be used to extinguish fires. If unusual fire hazards are involved or special procedures indicated, this is specified.

Unusual Fire or Explosive Hazards

Specifies hazards to personnel in case of fire, explosive danger.

ENVIRONMENTAL PROTECTION

Specifies how this product can be successfully disposed of.

Indicates precautions necessary in the event that leakage or breakage occurs. Included are (a) clean-up procedures, (b) personal protective equipment if necessary, (c) hazards that may be created, i.e. fire, explosion, etc.

PRECAUTIONARY LABEL

Label that is required or recommended.

Requirements for Transportation, Handling and Storage

Specifies handling and storage procedures. Gives ICC, DOT, or other regulations related to safety and health for transportation.

CHEMICAL AND PHYSICAL PROPERTIES

Boiling Point (or Range)

In degrees Fahrenheit or Celsius Boiling Point at 760 mmHg.

Vapor Pressure

Refers to the pressure of saturated vapor above the liquid expressed in mm of Hg. at 20 degrees Celsius or 68 degrees Fahrenheit.

Specific Gravity

The ratio of the density of the product to the density of water.

Vapor Density

The ratio of the density of the vapor at saturation concentration (20 degrees Celsius or 68 degrees Fahrenheit to the density of air at 760 mmHg.)

Appearance and Odor

Refers to the general characterization of the material, e.g. powder, colorless liquid, aromatic odor, etc.

pH

Refers to the degree of acidity or basicity of the material in a specific concentration.

- pH1-5 - STRONGLY ACIDIC
- pH5-7 - WEAKLY ACIDIC
- pH7-9 - WEAKLY BASIC
- pH9-14 - STRONGLY BASIC

Solubility

Refers to the solubility of a material by weight in water at room temperature. The term negligible, less than 0.1 %; slight, 0.1 to 1%; moderate, 1 to 10%; appreciable, 10% or greater. Gives solubility in organic solvents where appropriate.

Percent Volatile by volume

Refers to the amount volatilized at 20 degrees Celsius or 68 degrees Fahrenheit when allowed to evaporate.

Evaporation

Gives the rate of evaporation compared to a standard

Viscosity

Measure of flow characteristics in Kinematic viscosity of Saybolt Universal Seconds.

Hazardous Polymerization

Hazardous polymerization is that reaction which takes place at a rate which produces large amounts of energy. Indicates whether it may or may not occur and under what storage conditions.

Does the Material React Violently

Indicates whether the material will react violently, releasing large amounts of energy when exposed under conditions listed.

Composition

Components of the product as manufactured.

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