

ORIGINAL

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March 12, 2001

RECEIVED
CLERK'S OFFICE

MAR 15 2001

STATE OF ILLINOIS
Pollution Control Board

(618) 498-2488

E-MAIL: wmstrang@gtec.com

WILLIAM H. STRANG

TODD W. PARISH

Illinois Pollution Control Board
Ms. Dorothy Gunn, Clerk
100 West Randolph
Suite 11-500
Chicago, IL 60601

AS01-7

Re: Progressive Environmental Services Inc., Petition for Adjusted Standard

Dear Board,

Enclosed please find Progressive Environmental Services Inc. (PESI), petition for adjusted standard, complete with attachments and exhibits.

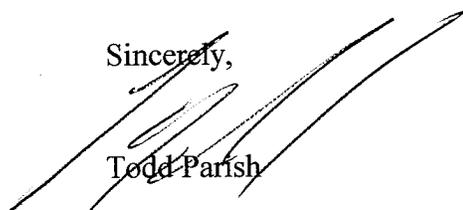
If it pleases the Board, I bring the following to your attention:

- * PESI will immediately publish notice and send verification of same within 14 days.
- * PESI's petition requests that if applicable, public hearing be waived. In the event that a hearing is necessary, the Petitioner is not available May 20-27, 2001.
- * PESI also requests an **expedited hearing** in order to fulfill a March 27, 2001 deadline imposed by IEPA.

PESI's request for adjusted standard is almost identical to an adjusted standard that the Board previously considered and granted. (See The Board's Order in AS-97-9 for Recycle Technologies Inc.)

Thank you for your consideration in this matter. Please direct any questions to the undersigned.

Sincerely,


Todd Parish

RECEIVED
CLERK'S OFFICE

MAR 15 2001

STATE OF ILLINOIS
Pollution Control Board

BEFORE THE ILLINOIS POLLUTION CONTROL BOARD

IN THE MATTER OF:

PETITION OF PROGRESSIVE ENVIRONMENTAL)
ENVIRONMENTAL SERVICES, INC.)
(d/b/a/ Antifreeze Recycling))
FOR AN ADJUSTED STANDARD UNDER)
35 ILL ADMIN. CODE 720.313 (c))

AS-01 - 7

PETITION FOR DETERMINING
WHETHER A MATERIAL IS A SOLID WASTE

COMES NOW, Progressive Environmental Services, Inc. (d/b/a Antifreeze Recycling), by and through its Attorney Todd Parish, for its petition for determining whether a material is a solid waste, state as follows:

- a) **A statement describing the standard from which an adjusted is sought.** PESI requests that the Illinois Pollution Control Board (Board) review PESI's process of filtering used antifreeze at a customer's site, and determine that the filtered antifreeze is a commodity-like material. PESI requests that the Board make a solid waste determination, in accordance with 35 IAC 720.131(c), that the filtered (reclaimed) antifreeze is not a solid waste, and as a result, is not regulated as such.
- b) **A statement that indicates the regulation of general applicability was promulgated to implement, in whole or in part, the requirements of the CWA (33 USC 1251 et seq.), Safe Drinking Water Act 942 USC 300(f) et seq.), Comprehensive Environmental Response, Compensation and Liability (42 USC 9601 et seq.), CAA (42 USC 7401 et seq.), or the State programs concerning RCRA, UIC, or NPDES [415 ILCS 5/28.1]** The regulation of general applicability, 35 IAC 721.131(c), was promulgated to implement, in part, the State program concerning RCRA.
- c) **The level of justification as well as other information or requirements necessary for an adjusted standard as specified by the regulation of general applicability or a statement that the regulation of general applicability does not specify a level of justification or other requirements.** There is no level of justification specified by 35 IAC 721.131(c); however, the regulation of general applicability does include specific criteria, which must be followed by the Board in making the solid waste determination. The criteria, as they apply to the applicant's process, are detailed below:
 1. *Degree of processing the material has undergone and the degree of further processing that is required.*

PESI will filter the antifreeze through a bag filtration system at the customer's site, then transport the filtered product to a centralized location for further conditioning in a reverse osmosis system. It is a common practice in the antifreeze recycling industry for a company to filter the used antifreeze through bag filters, add chemical inhibitors, and resell the material to the customer with out leaving the customer's location. In that situation, no further processing would be required; however, PESI has chosen to significantly improve the quality of the final

product through an additional off-site conditioning process. PESI has invested significant capital in a reverse osmosis filtration system that removes the dyes, inhibitors and other chemicals from filtered antifreeze, producing nearly pure ethylene glycol. Inhibitors may then be added to the recycled product to produce a high-quality alternative to virgin antifreeze. The high-quality product can be resold to a customer at a premium price.

2. *Value of the material after it has been reclaimed.*
The quality of the reclaimed product will approximate virgin antifreeze; thus, the value will be similar. Currently the market price for the reclaimed product is \$1.80 per gallon in the St. Louis metropolitan area.
3. *The degree to which the reclaimed material is like an analogous raw material.*
The reclaimed material will be equivalent to virgin antifreeze from a chemical, physical, and economic standpoint.
4. *The extent to which an end market for reclaimed material is guaranteed.*
The reclaimed material is sold to clients when the next service cycle is needed. PESI's on-site recycling business has been in operation since 1997, and has an established client list of over 100 clients. GM, Ford and most other original equipment manufacturers approve the use of recycled antifreeze (see attachment #1). Currently, the St. Louis area has three other companies recycling antifreeze. PESI has emerged as the leading provider of high-quality, recycled anti-freeze as a result of using the reverse osmosis conditioning process.
5. *The extent to which the reclaimed material is handled to minimize loss.*
Only the impurities removed from the used antifreeze are lost during the reclamation process. It is estimated that over 99% of the ethylene glycol content of used antifreeze is reclaimed.

Other relevant factors.

The centralized process consists of four tanks. The first tank is a receiving tank for the filtered antifreeze. The second tank is used for flocculation which further clarifies the material. The third tank feeds the reverse osmosis machine. The fourth tanks holds the product until it is pumped on to the truck for delivery. All final conditioning operations are conducted indoors, on a concrete floor.

- d) **A description of the nature of the petitioner's activity that is the subject of the proposed adjusted standard.** The material is filtered through a bag filter at the customer's facility onto a PESI truck. The reclaimed antifreeze is then transported to a central location for further conditioning to enhance the marketable value of the reclaimed antifreeze. At the central location, the material is off loaded into a holding tank. The material is then transferred to a flocculation step in a second tank. The flocculation step is used to further clarify the material. The material is then transferred to a third holding tank. The material is filtered through the reverse osmosis membranes and collected in a forth tank. This material is mixed with dyes and inhibitors and sold to customers.

The central processing facility is located at: 708 McClusky Road, Jerseyville, Illinois, 62052. The facility consists of a 40 foot by 60 foot steel frame building with a concrete slab floor, and an eight-inch concrete berm forming the foundation of the exterior walls. The steel frame building was built in the 1930's. The facility currently employs two people. The tanks used to contain the materials are 2000-gallon heavy-duty, polyethylene agricultural chemical tanks purchased new in 1999.

There are no air emissions resulting from the final conditioning process due to the nature of the materials processed (water, filtered anti-freeze), and the fact that the final conditioning process is a closed process. There are no volatile organic materials contained in the process that could result in

hazardous air emissions. There are no regulated discharges to a POTW, or other water source, as a result of the final conditioning process. The only residuals generated from the final conditioning process are precipitated solids. The residual solids were analyzed and found to contain no regulated levels of Toxicity Characteristic metals (see analytical results, attachment #2). PESI certifies, in accordance with Section 3.45 of the Illinois Pollution Control Act, that the residual solids are not Illinois Special Wastes, as defined in the Illinois Environmental Protection Act. The residual solids are disposed of in a solid waste landfill.

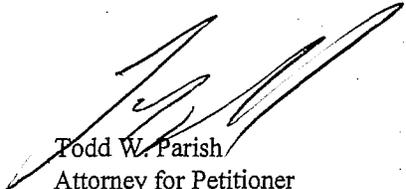
- e) **A description of the efforts that would be necessary if the petitioner to comply with the regulations of general applicability.** If the Board determines that the antifreeze reclaimed in the initial filtration process at the customer's site is solid waste, PESI would be required to obtain a Special Waste Operating Permit to manage the material at the central processing facility. PESI would have to manifest and report all shipments of the antifreeze from the customer's facility to the central processing facility. PESI would be subject to significant record keeping requirements associated with reporting and manifesting the antifreeze as a special waste. PESI would have to obtain a special waste transportation permit to transport the antifreeze from the customer's site to PESI's central facility. PESI would be required to obtain a financial instrument for closure of the facility.
- f) **A narrative description of the proposed adjusted standard as well as proposed language for a Board order that would impose the standard.** The regulation of general applicability (35 IAC 721.131) includes specific language allowing the Board to render a solid waste determination. There are no additional efforts necessary for PESI to meet the proposed adjusted standard. PESI has all equipment necessary to meet the proposed adjusted standard. There are no additional costs associated with meeting the proposed adjusted standard.
- g) **The quantitative and qualitative description of the impact of the petitioner's activity on the environment if the petitioner were to comply with the regulation of general applicability as compare to the quantitative and qualitative impact in the environment if the petitioner were to comply only with the proposed adjusted standard.** There are no obvious qualitative or quantitative differences in the impacts to the environment between adherence to the regulation of general applicability, and the proposed adjusted standard. The regulation of general applicability would require PESI to obtain a permit and generate additional paperwork in the form of manifests and reports, but it would have no direct impact on the environment. There would be no change in emissions generated by the centralized processing facility under the proposed adjusted standard, because the final conditioning process would remain unchanged. There are no emissions currently generated by the final conditioning process, therefore, permitting the process would do little, if anything, to enhance the environmental quality of the process. **Classifying antifreeze that has been run through the initial filtration process as a solid waste may have a negative impact on the environment. For example: An auto service station, faced with the burden of additional record keeping requirements associated with manifesting and reporting his antifreeze as a solid waste (Illinois Special Waste), may choose to pour the antifreeze into a public sewer system.**

The only byproduct of the filtration process is the concentrated solid residual material (precipitate) that is non-hazardous, and certified by PESI as exempt from the Illinois Special Waste rules (see item d.). PESI has sampled and analyzed the precipitate collected from the final conditioning process, and determined that the material is not a characteristic hazardous waste (see analytical results attachment #2). The material may be placed into a solid waste landfill. There are no other discharges to land, air, or water associated with any part of the final conditioning process.

The potential risk of harm to the environment associated with an accidental release from the final conditioning process is extremely limited for several reasons: 1) relatively small quantities of materials are stored at any given time; 2) there are limited environmental hazards associated with ethylene glycol (see MSDS, attachment #3); 3) the holding times for materials contained in the

filtration process, and stored as final product, are very short due to demand for the finished product. Currently, the maximum practical amount of material that may be contained in the entire final conditioning system at one time is 4000 gallons. It is important to note that the likelihood of a release of the entire contents is extremely low considering each of the three tanks would have to fail simultaneously. The holding times for the material in the process tanks is roughly 48 hours. The process is essentially a "hand to mouth" operation, requiring that the incoming material be processed to make new material to re-supply the customer.

- h) **A statement which explains how the petitioner seeks to justify, pursuant to the applicable level of justification the proposed adjusted standard.** No justification is necessary. Please refer to bullet item c) above for further detail.
- i) **A statement with supporting reasons that the Board may grant the proposed adjusted standard consistent with federal law.** The regulation of general applicability [35 IAC 721.131(c)] includes a provision for the Board to make a ruling in such cases in determining whether a material is a solid waste. The federal regulations mirror the state regulations in language and content. There are no further procedural requirements imposed by federal law that are applicable to the Board's decision on the petition. The citation for the federal regulation of general applicability is 40 CFR 260.31(c).
- j) **A statement requesting of waiving a hearing on the petition (pursuant to Section 104.422(a)(4) of this Part a hearing will be held on all petitions for adjusted standards filed pursuant to 35 Ill. Adm. Code 212.123(CAA)).** PESI requests that a hearing on the petition be waived.
- k) **The petition must cite to supporting documents or legal authorities whenever they are used as a basis for the petitioner's proof.** See attachments.
- l) **Any additional information which may be required in the regulation of general applicability.** In the industry of antifreeze recycling there are a number of companies that sell on site recycling machines (Wynn's, BP 5, Glyclean, and HYtech). These machines perform the same function as the bag filters PESI uses in the initial filtration process performed at the customer's site. In fact, the primary components of the machines are bag filters and a pump. The machines pump the antifreeze through the bag filters and generate a recycled product. Inhibitors and dyes are added to make it a finished product. PESI is simply polishing the recycled product at a centralized facility before it is resold as a finished product. In April of 1997 Recycle Technologies, Inc. (RTI) was granted an adjusted standard. RTI uses an RO system that is identical in function to the RO system used by PESI.



Podd W. Parish
Attorney for Petitioner
William H. Strang Ltd.
(618) 498-6821

Attachment #1

Group, Ref : Warranty Administration

Bulletin No.: 310504

Date: February, 1994

WARRANTY ADMINISTRATION

SUBJECT:

RECYCLED ENGINE COOLANT POLICY

MODELS:

1994 AND PRIOR PASSENGER CARS AND TRUCKS

ATTENTION:

WARRANTY CLAIMS ADMINISTRATOR AND SERVICE MANAGER

General Motors supports the use of recycled engine coolant for warranty repairs/service, providing a GM approved engine coolant recycling system is used. For detailed information on GM approved engine coolant recycling equipment guidelines refer to the following bulletins: Cadillac 93-1-18, GMC Truck 93-6B-34, Chevrolet 93-73-6B, Pontiac 93-6-18, Oldsmobile 1-93-43, Buick 93-6B-1 (Corporate Number 236203).

Recycled coolant will be reimbursed at the GMSPO dealer price for new coolant plus the appropriate mark-up. When coolant replacement is required during a warranty repair, it is crucial to assure that only the relative amount of engine coolant concentrate be charged, not the total diluted volume. In other words, if you are using two gallons of pre-diluted (50:50) recycled engine coolant to service a vehicle, you may request reimbursement for one gallon of Goodwrench engine coolant concentrate at the dealer price plus the appropriate warranty parts handling allowance.

Article No.
95-16-6

- COOLANT—USE OF RECYCLED ENGINE COOLANT—SERVICE TIP
- COOLING SYSTEM—USE OF RECYCLED ENGINE COOLANT—SERVICE TIP

FORD: 1980 and after CROWN VICTORIA, ESCORT, MUSTANG, THUNDERBIRD
1982-88 EXP
1984-94 TEMPO
1986 and after TAURUS
1988-93 FESTIVA
1989 and after PROBE
1994 and after ASPIRE
1995 and after CONTOUR

LINCOLN-MERCURY: 1980 and after CONTINENTAL, COUGAR, GRAND MARQUIS,
TOWN CAR
1981-87 LYNX
1984-92 MARK VII
1984-94 TOPAZ
1986 and after SABLE
1987-89 TRACER
1991-94 CAPRI
1991 and after TRACER
1993 and after MARK VIII
1995 and after MYSTIQUE

MERKUR: 1985-89 XR4TI
1988-89 SCORPIO

LIGHT TRUCK: 1980 and after F-150-350 SERIES
1981 and after ECONOLINE
1982 and after BRONCO
1983 and after RANGER
1984-90 BRONCO II
1986 and after AEROSTAR
1988 and after F SUPER DUTY
1991 and after EXPLORER
1993 and after VILLAGER
1995 and after WINDSTAR

ISSUE: Ford Motor Company authorizes the use of recycled engine coolant that, when properly processed and reinhibited, meets Ford specification ESE-M97B44-A. At this time, the Rotunda Coolant Recycler (181-00003) process is the only approved coolant recycling method available through Ford that is capable of producing recycled engine coolant that meets Ford specification ESE-M97B44-A.

ACTION: Refer to the following Service Procedure for coolant processing and reinhibiting using Rotunda Coolant Recycler (181-00003).

Attachment #2

May 23, 2000

Kenny Isringhausen
Antifreeze Recycling
1 Industrial Drive
Jerseyville, IL 62052
TEL: (618) 498-7570
FAX (618) 498-9848

RE: AF-1

Order No.: 0005158

Dear Kenny Isringhausen:

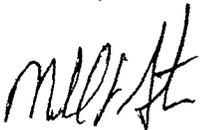
TEKLAB, INC received 1 sample on 5/9/00 11:53:00 AM for the analyses presented in the following report.

The sample results relate only to the requested analytes of interest that have been tested. Samples are analyzed on an as received basis unless otherwise requested and documented. All quality control criteria applicable to the test methods employed for this project have been satisfactorily met.

The following report shall not be reproduced, except in full, without the written approval of Teklab, Inc.

If you have any questions regarding these tests results, please feel free to call.

Sincerely,



Michael L. Austin
Director of Operations

CLIENT: Antifreeze Recycling
Project: AF-1
Lab Order: 0005158
Report Date: 5/23/00

CASE NARRATIVE

ICP Metals were subcontracted to Praire Analytical for TCLP Metals analysis by SW-846 6010B, but were analyzed by EPA 200.8. Data is stored in LIMS as SC_6010B_A.

ENVIRONMENTAL TESTING LABORATORY

TEL: 618-344-1004
FAX: 618-344-1005

CLIENT: Antifreeze Recycling
Work Order: 0005158
Lab ID: 0005158-01
Report Date: 23-May-00

Client Project: AF-1
Client Sample ID: AF-1
Collection Date: 5/9/00
Matrix: SOLID WASTE

Analyses	RL	Result	Units	DF	Date Analyzed	Analyst
SW-846 METHOD 1311, 7470A TCLP						
Mercury	0.20	<0.2	µg/L	1	5/17/00	JMW
SW-846 1311 TCLP, EPA ICP MEHTOD 200.8						
Arsenic	0.001	0.003	mg/L	1	5/17/00	SUB
Barium	0.001	0.020	mg/L	1	5/17/00	SUB
Cadmium	0.001	0.001	mg/L	1	5/17/00	SUB
Chromium	0.001	0.006	mg/L	1	5/17/00	SUB
Lead	0.001	0.010	mg/L	1	5/17/00	SUB
Selenium	0.001	0.005	mg/L	1	5/17/00	SUB
Silver	0.001	<0.001	mg/L	1	5/17/00	SUB

Qualifiers:
DF - Dilution Factor
RL - Reporting Limit
ND - Not Detected at the Reporting Limit

TNTC - Too numerous to count
D - Diluted out of sample
Surr - Surrogate Standard added by lab

Attachment #3

MATERIAL SAFETY DATA SHEET

EM SCIENCE

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Manufacturer.....: Preparation Date.: 6/17/98
EM SCIENCE
A Division of EM Industries Information Phone Number.: 856-423-6300
P.O. Box 70 Hours: Mon. to Fri. 8:30-5
480 Democrat Road Chemtrec Emergency Number: 800-424-9300
Gibbstown, N.J. 08027 Hours: 24 hrs a day

Catalog Number(s):
EX0564 EX0565

Product Name:
Ethylene Glycol

Synonyms:
Glycol; 1,2-Ethenediol

Chemical Family:
Polyalcohol

Formula:
HOCH2CH2OH

Molecular Weight.: 62.07

2. COMPOSITION / INFORMATION ON INGREDIENTS

Table with 3 columns: Component, CAS #, Appr %. Row 1: Ethylene Glycol, 107-21-1, 100%

3. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

HARMFUL OR FATAL IF SWALLOWED.

May Be Harmful If Inhaled or Absorbed.

May Cause Damage To Kidney, Liver and Central Nervous System.

Appearance:

Colorless, odorless liquid

POTENTIAL HEALTH EFFECTS (ACUTE AND CHRONIC)

Symptoms of Exposure:

Harmful if swallowed (100 ml can be fatal).

Causes abdominal pain, dizziness, lumbar pain, nausea, vomiting, diarrhea.

May be harmful if inhaled or absorbed.

May cause liver and central nervous system damage and possibly fatal kidney damage.

Irritating on contact with skin, eyes or mucous membranes.

Medical Cond. Aggravated by Exposure:

Existing kidney disease.

Routes of Entry:

Inhalation, ingestion or skin contact.

Carcinogenicity:

The material is not listed (IARC, NTP, OSHA) as cancer causing agent.

1. FIRST AID MEASURES

Emergency First Aid:

GET MEDICAL ASSISTANCE FOR ALL CASES OF OVEREXPOSURE.

Skin: Wash thoroughly with soap and water.

Eyes: Immediately flush thoroughly with water for at least 15 minutes.

Inhalation: Remove to fresh air; give artificial respiration if breathing has stopped.

Ingestion: If conscious, drink water and induce vomiting

immediately as directed by medical personnel. Never give anything by mouth to an unconscious person.

2. FIRE FIGHTING MEASURES

Flash Point (F) : 232F (tcc)

Flammable Limits LEL (%): 3.20

Flammable Limits UEL (%): 15.30

Extinguishing Media :

Water spray, dry chemical, foam, CO2

Fire Fighting Procedures:

Wear self-contained breathing apparatus.

Fire & Explosion Hazards:

Thermal decomposition produces acrid fumes.

6. ACCIDENTAL RELEASE MEASURES

Spill Response:

Evacuate the area of all unnecessary personnel.

Wear suitable protective equipment listed under Exposure / Personal Protection.

Eliminate any ignition sources until the area is determined to be free from explosion or fire hazards.

Contain the release and eliminate its source, if this can be done without risk.

Take up and containerize for proper disposal as described under Disposal.

Comply with Federal, State, and local regulations on reporting releases. Refer to Regulatory Information for reportable quantity and other regulatory data.

7. HANDLING AND STORAGE

Handling & Storage:

Keep container closed.

Store in a cool area away from ignition sources and oxidizers.

Do not breathe vapor.

Do not get in eyes, on skin, or on clothing.

Retained residue may make empty containers hazardous; use caution!

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

ENGINEERING CONTROLS AND PERSONAL PROTECTIVE EQUIPMENT:

Ventilation, Respiratory Protection, Protective Clothing, Eye Protection:

Respiratory Protection: If workplace exposure limit(s) of product or any component is exceeded (see TLV/PEL), a NIOSH/MSHA approved air supplied respirator is advised in absence of proper environmental control. OSHA regulations also permit other NIOSH/MSHA respirators (negative pressure type) under specified conditions (see your safety equipment supplier). Engineering and/or administrative controls should be implemented to reduce exposure.

Material should be handled or transferred in an approved fume hood or with adequate ventilation.

Protective gloves (Natural rubber, PVC or equivalent) should be worn to prevent skin contact.

Safety glasses with side shields should be worn at all times.

Work/Hygenic Practices:

Wash thoroughly after handling.

Do not take internally.

Eye wash and safety equipment should be readily available.

EXPOSURE GUIDELINES

OSHA - PEL:

Component	TWA		STEL		CL		Skin
	PPM	MG/M3	PPM	MG/M3	PPM	MG/M3	
Ethylene Glycol					50	125	

ACGIH - TLV

Component	TWA		STEL		CL		Skin
	PPM	MG/M3	PPM	MG/M3	PPM	MG/M3	
Ethylene Glycol			50	127	50	127	

If there are no exposure limit numbers listed in the Exposure Guidelines chart, this indicates

9. PHYSICAL AND CHEMICAL PROPERTIES

Boiling Point (C 760 mmHg) : 197C

Melting Point (C) : -12.7C

Specific Gravity (H2O = 1) : 1.113

Vapor Pressure (mm Hg) . . . : 0.08 20C

Percent Volatile by vol (%): N/A

Vapor Density (Air = 1) . . : 2.1

Evaporation Rate (BuAc = 1): 0.01

Solubility in Water (%) . . : Miscible

Appearance :

Colorless, odorless liquid

10. STABILITY AND REACTIVITY

Stability: Yes

Hazardous Polymerization:

Does not occur

Hazardous Decomposition:

30x

Conditions to Avoid:

Extreme heat; open flames; sparks

Materials To Avoid:

() Water

(X) Acids

() Bases

() Corrosives

(X) Oxidizers

(X) Other: Chromium trioxide, potassium permanganate, silver peroxide

11. TOXICOLOGICAL INFORMATION

Toxicity Data

ihl-hmn TCLo: 10000 mg/cu.m.
orl-hmn LDLo: 398 mg/kg
orl-rat LD50: 4700 mg/kg

Toxicological Findings:

Test on laboratory animals indicate material may produce adverse mutagenic and reproductive effects.

Cited in Registry of Toxic Effects of Chemical Substances (RTECS)

12. DISPOSAL CONSIDERATIONS

EPA Waste Numbers:

Treatment:

Material does not have an EPA Waste number and is not a listed waste, however consultation with a permitted waste disposal site (TSD) should be accomplished.

ALWAYS CONTACT A PERMITTED WASTE DISPOSER (TSD) TO ASSURE COMPLIANCE WITH ALL CURRENT LOCAL, STATE AND FEDERAL REGULATIONS.

13. TRANSPORT INFORMATION

DOT Proper Shipping Name:

Environmentally Hazardous Substance, Liquid, n.o.s. (Ethylene Glycol)

DOT ID Number :

UN3082

14. REGULATORY INFORMATION

TSCA Statement:

The CAS number of this product is listed on the TSCA Inventory.

Component	SARA EHS (302)	SARA EHS TPQ (lbs)	CERCLA RQ (lbs)
Ethylene Glycol			5000

Component	OSHA Floor List	SARA 313	DeMinimis for SARA 313 (%)
Ethylene Glycol	Y	Y	1.0

If there is no information listed on the regulatory information chart, this indicates that the

15. OTHER INFORMATION

Comments:

None

NFPA Hazard Ratings:

Health : 1
Flammability : 1
Reactivity : 0

Special Hazards :

Revision History: 11/1/81 9/1/83 1/29/87 10/27/87 6/20/89 3/1/91
3/2/95 9/8/95 10/17/96 9/4/97

| = Revised Section

N/A = Not Available

N/E = None Established

The statements contained herein are offered for informational purposes only and are based upon technical data that EM SCIENCE believes to be accurate. It is intended for use only by persons having the necessary technical skill and at their own descretion and risk. Since conditions and manner of use are outside our control, we make NO WARRENTY, EXPRESS OR IMPLIED, OR MERCHANTABILITY, FITNESS OR OTHERWISE.

KMCO -- PAR, COOLANT PLUS (MEG, EG, ANTIFREEZE, 1, 2-ETHANEDIOL) - ANTIFREEZE

MATERIAL SAFETY DATA SHEET

NSN: 6850014413218

Manufacturer's CAGE: 0LAF6

Part No. Indicator: A

Part Number/Trade Name: PAR, COOLANT PLUS (MEG, EG, ANTIFREEZE, 1, 2-ETHANEDIOL)

=====
General Information

=====
Item Name: ANTIFREEZE
Company's Name: KMCO INC
Company's Street: 16503 RAMSEY ROAD
Company's City: CROSBY
Company's State: TX
Company's Country: US
Company's Zip Code: 775335
Company's Emerg Ph #: 800-424-9300 (CHEMTREC)
Company's Info Ph #: 281-328-3501
Safety Data Action Code: A
Record No. For Safety Entry: 001
Tot Safety Entries This Stk#: 002
Status: SE
Date MSDS Prepared: 28FEB97
Safety Data Review Date: 10JUN98
Supply Item Manager: CX
MSDS Serial Number: CGXHX
Specification Number: A-A-52624
Spec Type, Grade, Class: TYPE I
Hazard Characteristic Code: J7
Unit Of Issue: GL
Unit Of Issue Container Qty: 1 GALLON
Type Of Container: CAN
Net Unit Weight: 9.5 LBS
=====

=====
Ingredients/Identity Information

=====
Proprietary: NO
Ingredient: ETHYLENE GLYCOL (SARA 313) (CERCLA)
Ingredient Sequence Number: 01
Percent: 84-94
Ingredient Action Code: A
NIOSH (RTECS) Number: KW2975000
CAS Number: 107-21-1
OSHA PEL: NOT ESTABLISHED
ACGIH TLV: C STEL39PPM, A4, VAP96
Other Recommended Limit: NONE RECOMMENDED
=====

=====
Physical/Chemical Characteristics

=====
Appearance And Odor: BLUE/GREEN LIQUID, MILD ODOR
Boiling Point: 330F, 166C
Melting Point: <-40F, <-40C
Vapor Pressure (MM Hg/70 F): <0.1
Vapor Density (Air=1): >1.0
Specific Gravity: 1.137 @60F
Decomposition Temperature: NP
Evaporation Rate And Ref: <0.01, BUTYL ACETATE=1
Solubility In Water: SOLUBLE
Percent Volatiles By Volume: NP
Viscosity: NP
pH: N/DETR
Corrosion Rate (IPY): NP
Autoignition Temperature: N/DETR
=====

=====
Fire and Explosion Hazard Data

=====
Flash Point: >200F, >93C
Flash Point Method: TCC
Lower Explosive Limit: N/DETERMINED
Upper Explosive Limit: N/DETERMINED
Extinguishing Media: USE WATER FOG, ALCOHOL FOAM, DRY CHEMICAL OR CARBON DIOXIDE.
Special Fire Fighting Proc: MATL WONT BURN UNLESS PRE-HEATED. DONT ENTER UNCONFINED FIRE SPACE W/O FULL BUNKER GEAR INCLUDE +PRESSURE SCBA. COOL FIRE-EXPOSED CNTNS W/WATER.
=====

UNUSUAL FILE AND EXPI DATES: NONE SPECIFIED BY MANUFACTURER.

Reactivity Data

Stability: YES
Con To Avoid (Stability): STRONG OXIDIZING AGENTS
Materials To Avoid: STRONG OXIDIZING AGENTS
Hazardous Decomp Products: CARBON MONOXIDE AND UNIDENTIFIED ORGANIC COMPOUNDS MAY FORM DURING COMBUSTION.
Hazardous Poly Occur: NO
Conditions To Avoid (Poly): NOT APPLICABLE

Health Hazard Data

LD50-LC50 Mixture: ACUTE ORAL LD50 4.0 G/KG (RAT).
Route Of Entry - Inhalation: YES
Route Of Entry - Skin: NO
Route Of Entry - Ingestion: YES
Health Haz Acute And Chronic: INHAL:VAP MILDLY TO MARKEDLY IRRIT TO LUNGS DEPENDING ON EXPO LEVEL.INGEST:MAY BE HARMFUL OR FATAL IF SWALLOWED.MAY PRODUCE CNS DEPRESSION,KIDNEY DMG WHICH MAY BE FATAL.SKIN/EYE CONTACT:NO ADVERSE EFFECTS EXPECTED W/EXPO TO SKIN.BRIEF CONTACT MAY CAUSE SLIGHT IRRIT.PROL CONTACT AS W/CLOTH WET W/MATL MAY (SIGN/SYMPT)
Carcinogenicity - NTP: NO
Carcinogenicity - IARC: NO
Carcinogenicity - OSHA: NO
Signs/Symptoms Of Overexp: HEALTH:CAUSE MORE SEVERE IRRIT & DISCOMFORT SEEN AS LOCAL REDNESS & SWELLING.PRODUCT IS MODERATELY TO SEVERELY IRRIT TO EYES.VAPORS CAN ALSO CAUSE SEVERE EYE IRRIT.CHRONIC EFFECTS:REPEATED INGESTION MAY CAUSE KIDNEY DMG.
Med Cond Aggravated By Exp: PRE-EXISTING SKIN/EYE/RESP DISORDERS MAY BE AGGRAVATED BY EXPOSURE TO THIS PRODUCT.IMPAIRED KIDNEY FUNCTION FRM PRE-EXISTING DISORDERS MAY BE AGGRAVATED BY EXPOSURE TO THIS PRODUCT.
Emergency/First Aid Proc: INHAL:REMOVE TO FRESH AIR.NOT BREATH GIVE ART RESP.GET MED ATTN.EYE:FLUSH W/LG AMT OF WATER FOR @LEAST 15MINS,HOLDING EYELIDS OPN.DISCOMFORT PERSIST GET MED ATTN.SKIN:FLUSH W/WATER.INGEST:IMMED CONTACT POISON-CNTRL CNTR/EMERG TREATMENT CNTR/PHYSICIAN.

Precautions for Safe Handling and Use

Steps If Matl Released/Spill: USE CAUT JUDGMENT WHEN CLEAN LG SPILLS-WEAR RESP/PPE AS APPROPRIATE.SHUT OFF LEAK SOURCE W/O RISK.DIKE/CONTAIN.REMOVE W/VAC TRUCKS/PUMP TO STORAGE/SALVG VESS.SOAKUP RESIDUE W/H2O TO REMOVE TRACE RESIDUE.SM-TAKEUP W/ABSORBENT MATL.DISPO PROPERLY(SUPP)
Neutralizing Agent: NONE SPECIFIED BY MANUFACTURER.
Waste Disposal Method: SPILLED MATL MAY BE RECOVERED OR RECYCLED.MATL MUST BE DISPOSED OF IN ACCORDANCE WITH LOCAL, STATE AND FEDERAL REGULATIONS.NO CERCLA CHEMS.SARA TITLE III CHEM:ETHYLENE GLYCOL RQ=5000LBS.
Precautions-Handling/Storing: STORE OUT OF DIRECT SUNLIGHT & IN COOL WELL-VENTI AREA.
Other Precautions: PRODUCT FOR INDUSTRIAL USE ONLY.KEEP OUT OF REACH OF CHILDREN.DONT TAKE INTERNALLY.

Control Measures

Respiratory Protection: USE APPROVED RESPIRATOR OR AIR SUPPLY MASK IF WORKING IN ENCLOSED AREA.IF EXPOSURE MAY OR DOES EXCEED OCCUPATIONAL EXPO LIMITS USE NIOSH APPROVED RESPIRATOR TO PREVENT OVEREXPOSURE.
Ventilation: NONE SPECIFIED BY MANUFACTURER.
Protective Gloves: FC SHIELD,GLOVES
Eye Protection: FACE SHIELD
Other Protective Equipment: APRONS,SLEEVES,BOOTS.GEN RECOMMENDATION BASED ON OUR EXPERIENCE;HOWEVER INDIVIDUAL CIRCUMST COULD REQUIRE ADDN EQPMT.
Work Hygienic Practices: NONE SPECIFIED BY MANUFACTURER.
Suppl. Safety & Health Data: SPILL:COMPLY W/ALL FED/STATE/LOC REGS IN REPORTING SPILL/CLEANUP.

Transportation Data

Transportation Action Code: A
Trans Data Review Date: 98161
DOT PSN Code: ZZZ
DOT Proper Shipping Name: NOT REGULATED BY THIS MODE OF TRANSPORTATION
IMO PSN Code: ZZZ
IMO Proper Shipping Name: NOT REGULATED FOR THIS MODE OF TRANSPORTATION
ATA PSN Code: ZZZ

AFI Prop! Shipping Name: NOT REGULATED BY THIS MODE OF TRANSPORTATION
AFI PSN Code: ZZZ
Additional Trans Data: PER MSDS:SHIPMENTS >5250LBS:BULK ANTIFREEZE, HAZ
CLASS 9, UN 3082, PKG III, ENVIRONMENTALLY HAZ SUBSTANCE, LIQ N.O.S.
(ETHYLENE GLYCOL), LABEL-ENVIRO HAZ SUBST, LIQ, RQ-5000LBS (ETHYLENE GLYCOL);
SHIPMENTS <5250LBS:ANTIFREEZE, NONHAZ LIQ, UN=N/APPL, NOT REGULATED.

=====
Disposal Data
=====

=====
Label Data
=====

Label Required: YES
Technical Review Date: 10JUN98
Label Status: F
Common Name: PAR, COOLANT PLUS (MEG, EG, ANTIFREEZE, 1,2-ETHANEDIOL)
Chronic Hazard: YES
Signal Word: CAUTION!
Acute Health Hazard-Slight: X
Contact Hazard-Slight: X
Fire Hazard-None: X
Reactivity Hazard-None: X
Special Hazard Precautions: INHAL:VAP MILDLY TO MARKEDLY IRRIT TO LUNGS
DEPENDING ON EXPO LEVEL. INGEST:MAY BE HARMFUL/FATAL.MAY PRODUCE CNS
DEPRESS,KIDNEY DMG WHICH MAY BE FATAL.SKIN/EYE:NO ADVERSE EFFECTS EXPECTED
W/EXPO TO SKIN.BRIEF CONTACT MAY CAUSE SLIGHT IRRIT.PROL CONTACT AS W/CLOTH
WET W/MATL MAY CAUSE SEVERE IRRIT,DISCOMFT (RED,SWELL). MODERATELY-SEVERER
REMOVE TO FRESH AIR.NOT BREATH GIVE ART RESP.GET MED ATTN.EYE:FLUSH W/LOTS
EYE/SKIN/KIDNEY/LUNG
Protect Eye: Y
Protect Skin: Y
Protect Respiratory: Y
Label Name: KMCO INC
Label Street: 16503 RAMSEY ROAD
Label City: CROSBY
Label State: TX
Label Zip Code: 775335
Label Country: US
Label Emergency Number: 800-424-9300 (CHEMTREC)
Year Procured: 1998

CAM2 Full Strength Antifreeze Material Safety Data Sheet

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MATERIAL SAFETY DATA SHEET Page 1 of 5

CAM2 OIL PRODUCTS COMPANY
380 WEST BUTLER AVENUE
NEW BRITAIN, PA 18901
215.340.CAM2(2262)
**CHEMTREC: 800.424.9300 24 hours
Everyday**

Emergency Telephone Number:

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Name: **CAM2 Full-Strength Antifreeze**

This product is classified as Hazardous by definition No.(s) 2.7 on the 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 employees 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 respiratory protection for cleaning large spills or upon entry into tanks, vessels, or other confined spaces.

Ventilation: Normal.

Permissible Concentrations:

Air: 10 mg/cube meter for particulate mist; 50 ppm (125 mg/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: If swallowed, contact a poison control center, emergency treatment center, or physician immediately. **DO NOT** induce vomiting.

CAM2 OIL PRODUCTS COMPANY
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Product Name: **CAM2 Full-Strength Antifreeze**

Inhalation: Remove to fresh air; if not breathing, apply artificial respiration. Get Medical attention. Keep affected person warm and at rest.

Other Instructions: None

PHYSIOLOGICAL EFFECTS

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. Oral administration of very high doses of ethylene glycol produced birth defects in laboratory animals.

Sensitization Properties

Skin: Unknown Respiratory: Unknown

Median Lethal Dose (LLD50 LC50 x Species)

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

Inhalation: Not determined

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

Other: Not determined

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 for additional comments-

'Composition'

FIRE PROTECTION INFORMATION

Ignition Temperature: 775° F Flash Point (method) : 262° F (COC)

Flammable Limits (%) Lower - 3.2% Upper - 15.3%

Products Evolved When Subjected to Heat or Combustion:

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

MATERIAL SAFETY DATA SHEET Page 3 of 5

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CAM2 OIL PRODUCTS COMPANY
380 WEST BUTLER AVENUE
NEW BRITAIN, PA 18901
215.340.CAM2(2262)

**CHEMTREC: 800.424.9300 24 hours
Everyday**

Emergency Telephone Number:

Product Name: **CAM2 Full-Strength Antifreeze**

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

ENVIRONMENTAL PROTECTION

Waste Disposal Method:

Under RCRA, it is the responsibility of the user of products to determine, at the time of disposal, whether product meets RSRA criteria for hazardous waste. This is because product uses, transformations, mixture, processes, etc., may render the resulting material hazardous. (See Waste Classification.)

Procedures in Case of Breakage or Leakage: Contain spill if possible. Wipe up or absorb on suitable material and shovel up. Emergency Telephone Number - Chem Tel, Inc. 1.800.255.3924.

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 Statement:

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.

Ethylene glycol has produced birth defects in rodents

Requirements for Transportation, Handling and Storage:

Minimum feasible handling temperature should be maintained. Periods of exposure to high temperature should be minimized. Water contamination should be avoided.

DOT Proper Shipping Name: Not Applicable

DOT Hazard Class: Not applicable

MATERIAL SAFETY DATA SHEET Page 4 of 5

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CAM2 OIL PRODUCTS COMPANY
380 WEST BUTLER AVENUE
NEW BRITAIN, PA 18901
215.340.CAM2(2262)

**CHEMTREC: 800.424.9300 24 hours
Everyday**

Emergency Telephone Number:

Product Name: **CAM2 Full-Strength Antifreeze**

CHEMICAL AND PHYSICAL PROPERTIES

Boiling Point: 320° F min.	Vapor Pressure: 18 mmHg
Specific Gravity: 1.127 (H ₂ O) = 1)	Vapor Density: 2.14 (air = 1)
Appearance/Odor: Green/Mild Glycol	Viscosity: 21cP @ 20° C
pH for Finished Product: 10-11	Solubility: Soluble in water
Percent Volatile by Volume: nil	Evaporation: Not Determined
Hazardous Polymerizations: Do not Occur	
The material reacts violently with: strong oxidizers	

COMPOSITION

Chemical/Common Name	CAS no.	Exposure Limit	Range In %
* 1, 2 -ethanediol (ethylene glycol)	107211	50 ppm Ceiling - ACGIH	95.0 - 96.0

* & Hazardous according to OSHA (1910.1200) or one or more state

Right-to-Know lists.

	% by Weight		
Total Inhibitor Package	2.0 - 3.0		
Water	2.5 - 3.0		
Rust Inhibitors			
Borates	1303-96-4	Moderately toxic by ingestion	0.2 - 0.5
Potassium Hydroxide	1310-58-3	Severe irritant to skin, eyes, mucous membranes; Moderately toxic by ingestion	0.2 - 0.4
Monoethanolamine	1414-35		0.1 - 0.3
Sodium Nitrate	7631-99-4		0.1 - 0.5
Sodium Nitrate	7632 - 00.0		0.1 - 0.5
Sodium Tolytriazole	64665-57-2	Irritant and corrosive to skin and tissue	0.05 - 0.2