21

NEW MEXICO
ENVIRONMENT DEPARTMENT

Ground Water Quality Bureau

Harold Runnels Building
1190 St. Francis Drive
PO Box 5469, Santa Fe, NM 87502-5469
Phone (505) 827-2900 Fax (505) 827-2965
www.nmenv.state.nm.us

BILL RICHARDSON
Governor
DIANE DENISH
Lieutenant Governor

RON CURRY
Secretary
SARAH COTTRELL
Deputy Secretary

James ENTERED

CERTIFIED MAIL – RETURN RECEIPT REQUESTED

SEP

September 17, 2010

Anthony R. Grieggs, Group Leader
Environmental Protection Division
Water Quality & RCRA (ENV-RCRA)
P.O. Box 1663, Mail Stop K490
Los Alamos, NM 87545

RE: Response to Notice of Intent to Discharge; Discharge Permit Not Required for Fire Suppression Test Discharge at Technical Area 21, AI:856 (PRD20100007)

Dear Mr. Grieggs:

The New Mexico Environment Department (NMED) received a Notice of Intent (NOI), dated July 26, 2010 (copy enclosed), for the one-time discharge of approximately 120 gallons of hydrocarbon based, Class B fire suppression foam directly to the ground surface. The discharge is being made within a temporary excavation enclosure constructed for the remediation of the Material Disposal Area (MDA)-B facilities as required under the March 2005 Compliance Order on Consent. The notice satisfies the requirements of Subsection A of 20.6.2.1201 NMAC of the New Mexico Water Quality Control Commission (WQCC) Regulations (20.6.2 NMAC). The proposed discharge is located in Technical Area (TA) 21 at 35°52.7' north latitude, 106°17.2' west longitude, Los Alamos National Laboratory, Los Alamos County.

Based on information submitted in the Notice of Intent, the composition of the fire suppressant being used (First Strike TF-1170 Training Foam Super Concentrate) does contain a biodegradable component (Diethylene Glycol Monobutyl Ether) as described in the NOI; however, its primary component contains hydrocarbon surfactants which are not considered biodegradable. The actions proposed in the NOI further indicate that only the historical disposal trenches will be excavated following the fire suppression test and therefore only a portion of the soils which received foam suppressant will be removed from the site. The fate of the residual material that will remain is not discussed in the NOI, but nevertheless appears to pose little threat to ground water quality.

33955

NMED has reviewed the Notice of Intent and determined that a Discharge Permit is not required at this time because the information provided indicates it is unlikely that the proposed discharge will adversely affect ground water quality.

Although a Discharge Permit is not being required for the discharge proposed in the NOI at this time, you are not relieved of liability should your operation result in actual pollution of surface or ground waters. Information provided in the Notice of Intent does not clarify the fate of the non-biodegradable portion of the fire suppressant which will not be removed from the site. Please note that there may be a potential contaminant pathway for the fire suppressant foam residuals to enter surface waters through run-off from precipitation events after site remediation of MDA-B has been completed.

This decision by NMED does not relieve you of your responsibility to comply with any other applicable federal, state, and/or local laws and regulations, such as zoning requirements, plumbing codes and nuisance ordinances.

If at some time in the future you intend to change the amount, character or location of your discharge, or if observation or monitoring shows that the discharge is not as described in your Notice of Intent, you must file a revised Notice of Intent with the Ground Water Quality Bureau.

If you have any questions, please contact either Jennifer Fullam at (505) 827-2909 or George Schuman, Program Manager of the Ground Water Pollution Prevention Section, at (505) 827-2945.

Sincerely,

George Schuman for W. Olson

William C. Olson, Chief
Ground Water Quality Bureau

WO:JF

Enc: Notice of Intent, dated July 26, 2010

cc: Robert Italiano, District Manager, NMED District II (w/ enc)
NMED Santa Fe Field Office(w/ enc)
NOI File(w/ enc)
County File (w/ enc)
Glenn Saums, NMED SWQB(w/ enc)
Richard Powell, NMED SWQB (w/o enc)
James Bearzi, NMED HWB(w/ enc)
Steven Yanicak, NMED-DOE-Oversight Bureau (w/o enc)
Erik Galloway, NMED-DOE-Oversight Bureau (w/ enc)
Gene Turner, LASO-EO, Los Alamos National Laboratory, A316, Los Alamos, NM

87545 (w/o enc)
Michael B. Mallory, PADOPS, Los Alamos National Laboratory, A102, Los Alamos, NM 87545 (w/o enc)
Chris Cantwell, ADESHQ, Los Alamos National Laboratory, K491, Los Alamos, NM 87545 (w/o enc)
Michael Saladen ENV-RCRA, Los Alamos National Laboratory, K490, Los Alamos, NM 87545 (w/o enc)
Jacob Meadows, ENV-RCRA, Los Alamos National Laboratory, K490, Los Alamos, NM 87545 (w/o enc)
Mark Haagenstad, ENV-RCRA, Los Alamos National Laboratory, K490, Los Alamos, NM 87545 (w/o enc)
Charles Barnett, UI-DO, Los Alamos National Laboratory, J972, Los Alamos, NM 87545 (w/o enc)
Bob Beers, ENV-RCRA, Los Alamos National Laboratory, MS K497, Los Alamos, NM 87545 (w/o enc)

NMED FILE SUBMISSION
GROUND WATER TA-21
PRO 20100007
JUL 29 2010

BUREAU

Los Alamos
NATIONAL LABORATORY
EST. 1943

Environmental Protection Division
Water Quality and RCRA Group (ENV-RCRA)
P.O. Box 1663, Mail Stop K490
Los Alamos, New Mexico 87545
(505) 667-0666/FAX: (505) 667-5224

Date: July 26, 2010
Refer To: ENV-RCRA-10-143
LAUR: 10-04790

Mr. William C. Olson, Chief
Ground Water Protection Bureau
New Mexico Environment Department
Harold Runnels Building, N2250
1190 St. Francis Drive
P.O. Box 26110
Santa Fe, New Mexico 87502

Mr. Glenn Saums
Surface Water Quality Bureau
New Mexico Environment Department
Harold Runnels Building, N2050
1190 St. Francis Drive
P.O. Box 5469
Santa Fe, New Mexico 87502-5469

Dear Mr. Olson and Mr. Saums:

SUBJECT: NOTICE OF INTENT FOR FIRE SUPPRESSION TEST AT LOS ALAMOS NATIONAL LABORATORY TA-21 MATERIAL DISPOSAL AREA-B IN SUPPORT OF CLEANUP UNDER ADMINISTRATIVE ORDER ON CONSENT

Enclosed is a Notice of Intent to Discharge (NOI) that has been prepared for submittal to the New Mexico Environment Department (NMED) pursuant to 20.6.2.1201 NMAC of the New Mexico Water Quality Control Commission (WQCC) regulations and the Los Alamos National Laboratory (LANL) Liquid Discharge Reporting Guidance (Decision Tree), dated March 10, 2009.

LANL is remediating Material Disposal Area (MDA)-B under the March 2005 Compliance Order on Consent (Consent Order) by removing all buried waste from eight historic disposal trenches. The cleanup work is being performed pursuant to a work plan approved by the NMED Hazardous Waste Bureau. Activities related to investigation/remediation and materials management will be conducted within the site boundary and inside an enclosure. A one-time testing of a fire suppression system with US Training Foam in one of the trench enclosures is a critical part of this emergency response plan for both the workers involved in cleanup activities and the public.

As detailed in the enclosed NOI (Enclosure 1), the fire suppression test will use 120 gallons of US Training Foam (MSDS in Enclosure 2). The test will take place within an enclosure so there will be no potential for discharge to surface water during the test. The estimated depth to groundwater is 1,260 feet. Because the waste excavation activities will take approximately 30 days, the active ingredient in the foam (i.e.: diethylene glycol monoethyl ether, MSDS in Enclosure 3) in the soil surrounding the trench excavation will have significantly degraded by the time the enclosure is removed. Any minor amounts of diethylene glycol monoethyl ether remaining are unlikely to pose any risk to surface or groundwater.

Please contact Kate Lynnes (klynnes@lanl.gov or 505-654-3019) or Jacob Meadows (jmeadows@lanl.gov or 505-606-0185) if you have any questions.

Sincerely,

DGL

for Anthony R. Grieggs
Group Leader
Water Quality & RCRA Group (ENV-RCRA)

ARG:JM/lm

Enclosures: a/s

Cy: Robert George, NMED/GWQB, Santa Fe, NM, w/enc.
Jennifer Fullam, NMED/GWQB, Santa Fe, NM, w/enc.
Richard Powell, NMED/SWQB, Santa Fe, NM, w/enc.
Steven Yanicak, LASO-GOV, w/enc., M894
Gene Turner, LASO-EO, w/enc., A316
Michael B. Mallory, PADOPS, w/o enc., A102
J. Chris Cantwell, ADESHQ, w/o enc., K491
Michael Saladen, ENV-RCRA, w/o enc., K490
Jacob Meadows, ENV-RCRA, w/enc., K490
Victoria A. George, REG-DO, w/o enc., M991
Kathryn D. Lynnes, REG-COM, w/enc., M991
Andrew R. Baumer, TA54CL, w/enc., C348
Steven M. Henry, TA21-DO, w/enc., C348
Peter Rice, TA-21-DO, w/enc., C349
Jeff M. Erickson, ADESHQ, w/enc., C348
Frank W. Chromec, OS-BSI, w/enc., C349
ENV-RCRA File, w/enc., K490
IRM-RMMSO, w/enc., A150

ENCLOSURE 1

NOTICE OF INTENT

1. **Name and address of facility making the discharge.**

Los Alamos National Laboratory
P.O. Box 1663
Los Alamos, New Mexico 87545

2. **Location of the discharge (In Township, Range and Section, if available).**

Los Alamos National Laboratory, TA-21. Approximate coordinates: Latitude: 35° 52.7' North, Longitude -106° 17.2' West

3. **The means of discharge. (To lagoon, Flowing stream, Water course, Arroyo, Septic tank, other).**

The foam will not be discharged to or near any surface water course. The depth to groundwater is approximately 1,260 feet (see # 7 below). The "discharge" will occur during the one-time test of a fire suppression system inside a trench enclosure at MDA-B. No surface runoff can leave the building. A more detailed description of the test is provided in #5 below.

4. **The estimated concentration of contaminants (if any) in the discharge.**

The one-time test will use "US Training Foam", which is a synthetic blend of biodegradable foam agent. The active ingredient in the foam is diethylene glycol monoethyl ether (DGME). Material safety data sheets (MSDS) for both US Training Foam and DGME are attached. As described in Section 12 of the MSDS for DGME, aerobic screening test data indicate that rapid aerobic biodegradation is likely to be the most important mechanism for the removal of DGME from soil. Biodegradation rates of 48% to 87% were reported in non-acclimated cultures incubated for 20 days.

5. **The type of operation from which the discharge is derived.**

MDA-B is an inactive subsurface disposal site, designated as Solid Waste Management Unit (SWMU) 21-015, which may contain both hazardous and radiological chemicals. The site is located in Technical Area 21 (TA-21), on Delta Prime (DP) Mesa (a mesa separating Los Alamos Canyon and DP Canyon). MDA B occupies approximately 6 acres and consists of eight disposal trenches. MDA B received process wastes from operations within TA-21 at DP East and DP West from 1944 until it closed in 1948. Although no formal waste inventory was maintained, the wastes disposed of at MDA B are assumed to be composed primarily of radioactively contaminated laboratory wastes and debris and limited liquid chemical waste.

LANL is remediating MDA-B under the March 2005 Compliance Order on Consent (Consent Order) by removing all buried waste from 8 historic disposal trenches. The cleanup work is being performed pursuant to a work plan approved by the New Mexico Environment Department Hazardous Waste Bureau. Activities related to investigation/remediation and materials management will be conducted within the site boundary and inside an enclosure.

The potential hazards to remediation workers and the proximity to the city of Los Alamos and the businesses located north of DP Road required contingency planning for worst-case accident scenarios such as spontaneous ignition of pyrophoric materials by exposure to air. A one-time testing of a fire suppression system in one of the enclosures is a critical part of this emergency response plan for both the workers involved in cleanup activities and the public. It is important to

emergency responders that the system be tested with foam to better prepare them for actual site conditions during a fire or explosion.

The inside dimensions of an enclosure are 75 by 100 feet. During the test foam will spray from all of the fire suppression nozzles in the enclosure and cover the soil floor. Once the fire suppression test is complete, excavation activities will begin within 7 to 10 days and are anticipated to be complete within 30 days. Some of the soil will be removed when the trench is excavated. All contaminated excavated soils will be placed in an appropriate container, characterized and disposed of off-site.

As described in #4 above, the active ingredient in US Training Foam will significantly biodegrade within the 37 to 40 days that excavation activities will be ongoing within the enclosure. Therefore the perimeter soils remaining around the trench will not be excavated or sampled.

6. **The estimated flow to be discharged per day.**

As described in #5 above, the fire suppression test will be a one-time event. Approximately 120 gallons of US Training Foam will be discharged inside the enclosure during the event.

7. **The estimated depth to Ground-Water (if available).**

Observations of perched intermediate groundwater in Laboratory wells are rare on the Pajarito Plateau. Perched waters are thought to form mainly at horizons where geologic properties change dramatically, such as at paleosol horizons with clay or caliche found in basalt and volcanic sediment sequences. No perched water was encountered in a nearby boring drilled into the Otowi Member of the Bandelier Tuff to a depth of 660 ft bgs (approximately 6,500 ft asl).

The main aquifer in the Los Alamos area rises westward from the Rio Grande within the Santa Fe Group and into the Puye Formation beneath the central and western portion of the Pajarito Plateau. The depth of the aquifer decreases from about 1,200 ft bgs along the western margin of the plateau to about 600 ft below ground surface along the eastern margin. The regional aquifer was encountered in deep wells near MDA B at 5,870 ft asl in well R-7, at 5,850 ft asl in well Otowi-4, and at 5,835 ft asl in well R-8, resulting in an approximate 1260-ft depth to groundwater at MDA B.

ENCLOSURE 2

First Strike™ TF-1170 Training Foam Super Concentrate (US-TF-1170)
Material Safety Data Sheet

U.S. Foam Technologies, Inc.

SECTION 1 – PRODUCT AND COMPANY IDENTIFICATION

Product Name: First Strike™ TF-1170 Training Foam Super Concentrate
Product ID: US-TF-1170
Manufactured By: U.S. Foam Technologies, Inc.
Address: 800 E. Cotton St., Longview, Texas 75602
Telephone: 800-595-3626
Website: www.usfoam.com
Revision Date: December 11, 2009

SECTION 2 – HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW:
May cause irritation to the eyes and skin.

POTENTIAL HEALTH EFFECTS:
Eye Contact: May cause irritation. Signs/symptoms can include redness, swelling, pain, tearing and hazy vision.
Skin Contact: May cause irritation. Signs/symptoms can include local redness, swelling and itching.
Inhalation: Inhalation of mists may cause irritation of upper respiratory track and mucous membranes.
Ingestion: May cause abdominal discomfort, nausea, and irritation to mucous membranes.

Carcinogenicity: Non-carcinogenic. No components listed with NTP, IARC or OSHA.

SECTION 3 – COMPOSITION/INFORMATION ON INGREDIENTS

Component	CAS #	Weight %
Proprietary Blend of Water, Hydrocarbon Surfactants and Corrosion Inhibitors	Trade Secret	72% - 78%
Diethylene Glycol Monobutyl Ether	112-34-5	22% - 28%

SECTION 4 – FIRST AID MEASURES

Eye Contact: Flush with large amounts of water for at least 15 minutes while holding lid(s) open. Contact a physician.
Skin Contact: Flush affected area with large amounts of water. If irritation persists, seek medical attention.
Inhalation: If signs/symptoms occur, remove person to fresh air. If signs/symptoms persist, seek medical attention.
Ingestion: Drink several glasses of water. DO NOT induce vomiting. Contact a physician/poison control center immediately.

SECTION 5 – FIRE FIGHTING MEASURES

Flash Point (°F): None
Flammable Limits: LEL – N/E
UEL – N/E
Extinguishing Media: This product is a fire extinguishing agent. Use media appropriate for surrounding materials.
Special Fire Fighting Procedures: Wear full protective clothing, self-contained breathing apparatus, gloves and boots.

SECTION 6 – ACCIDENTAL RELEASE MEASURES

Use personal protection recommended in SECTION 8. Area may be slippery; use appropriate caution to avoid slips and falls. Contain spill. As much as practicable, prevent product from entering ditches and waterways. Cover with absorbent material. Collect spilled material and place in approved sealed container. Refer to SECTION 11 for disposal considerations.

SECTION 7 – HANDLING AND STORAGE

HANDLING:
Follow good industrial hygiene practices when handling. Avoid eye contact with vapor, spray or mist. Avoid skin contact. Do not eat, drink or smoke when using this product. Use with adequate ventilation. Avoid breathing vapors, spray or mists. Wash exposed areas thoroughly with soap and water after handling and before eating.

RECOMMENDED STORAGE:
Store product in its original container or approved end-use device. Do not store containers on their sides. Protect from freezing. Keep container closed when not in use.

SECTION 8 – EXPOSURE CONTROLS/PERSONAL PROTECTION

EXPOSURE GUIDELINES:
Exposure Limits: Diethylene Glycol Monobutyl Ether
OSHA PEL: N/E ACGIH TLV: N/E

ENGINEERING CONTROLS:
No specific controls required.

PERSONAL PROTECTIVE EQUIPMENT:

Eye Protection:	Safety glasses, goggles or full-face shield
Skin Protection:	Chemical resistant gloves
Respiratory Protection:	None generally required

SECTION 9 – PHYSICAL AND CHEMICAL PROPERTIES

Appearance & Odor:	Clear Liquid with Slight Solvent Odor
pH:	7.0 - 8.5
Specific Gravity (H_2O=1):	1.008 ± 0.025
Boiling Point:	85-90 °C
Vapor Pressure (mm Hg):	N/A
Vapor Density (Air=1):	N/A
Solubility in Water:	Complete

SECTION 10 – STABILITY AND REACTIVITY

Stability: Stable
Incompatibility: Strong oxidizers
Hazardous Decomposition Products: None known
Hazardous Polymerization: Will not occur

SECTION 11 – DISPOSAL CONSIDERATIONS

Disposal should be in accordance with applicable local, regional and federal laws and regulations.

SECTION 12 – TRANSPORT INFORMATION

DOT Hazard Class: Non-hazardous
DOT Shipping Name: Not regulated
NMFC ID Number: 69160 - Fire Extinguisher Charges or Compounds, NOI

SECTION 13 – REGULATORY INFORMATION

INVENTORY STATUS:
All components are on the US TSCA (Toxic Substances Control Act) inventory or are exempt from listing.

FEDERAL REGULATIONS:
Component(s) subject to SARA Title III Section 313 reporting requirements:
Diethylene Glycol Monobutyl Ether (Glycol Ethers Category)

Component(s) subject to CERCLA reporting requirements: None

STATE REGULATIONS:
Component(s) subject to California Proposition 65 warning requirements: None

SECTION 14 – OTHER INFORMATION

HMIS® III (HAZARDOUS MATERIALS IDENTIFICATION SYSTEM) RATINGS:

HEALTH:	2
FLAMMABILITY:	0
PHYSICAL HAZARD:	0
PERSONAL PROTECTION:	Refer to SECTION 8

Hazard Index
4 = Severe Hazard
3 = Serious Hazard
2 = Moderate Hazard
1 = Slight Hazard
0 = Minimal Hazard

SECTION 15 - DISCLAIMER

While U.S. Foam Technologies, Inc. believes that the information contained herein is accurate and reliable as of the date of this Material Safety Data Sheet, no guarantee or warranty, expressed or implied, is made to the accuracy, completeness, or reliability of the information.

ENCLOSURE 3

Material Safety Data Sheet
Diethylene Glycol Monoethyl Ether

ACC# 07332

Section 1 - Chemical Product and Company Identification

MSDS Name: Diethylene Glycol Monoethyl Ether
Catalog Numbers: D51 4, D51-4, D514
Synonyms: 2-(2-Ethoxyethanol)-ethanol; carbitol; carbitol cellosolve; diethylene glycol ether; ethyl carbitol; DGME; ethyl digol
Company Identification:

Fisher Scientific
1 Reagent Lane
Fair Lawn, NJ 07410

For information, call: 201-796-7100
Emergency Number: 201-796-7100
For CHEMTREC assistance, call: 800-424-9300
For International CHEMTREC assistance, call: 703-527-3887

Section 2 - Composition, Information on Ingredients

CAS#	Chemical Name	Percent	EINECS/ELINCS
111-90-0	Diethylene glycol monoethyl ether	100.0	203-919-7

Section 3 - Hazards Identification

EMERGENCY OVERVIEW

Appearance: colorless liquid. Flash Point: 187 deg F.
Caution! Combustible liquid and vapor. May be harmful if swallowed. May cause respiratory tract irritation. May cause skin irritation. May cause eye irritation. May cause digestive tract irritation. May form explosive peroxides. May cause kidney damage. This substance has caused adverse reproductive and fetal effects in animals.
Target Organs: Kidneys.

Potential Health Effects
Eye: May cause eye irritation. May cause transient corneal injury. Causes redness and pain.
Skin: May cause mild skin irritation.
Ingestion: May cause gastrointestinal irritation with nausea, vomiting and diarrhea. May cause kidney damage. May cause central nervous system depression. May be harmful if swallowed.
Inhalation: Low hazard for usual industrial handling. May cause kidney damage.
Chronic: No information found.

Section 4 - First Aid Measures

Eyes: Flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. If irritation develops, get medi cal aid.
Skin: Flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Get medical aid if irritation develops or persists.
Ingestion: If victim is conscious and alert, give 2-4 cupfuls of milk or water. Never give anything by mouth to an unconscious person. Get medical aid immediately.
Inhalation: Remove from exposure and move to fresh air immediately. Get medical aid.
Notes to Physician: Monitor kidney function closely.

Section 5 - Fire Fighting Measures

General Information: As in any fire, wear a self-contained breathing apparatus in pressure-demand, MSHA/NIOSH (approved or equivalent), and full protective gear. Combustible liquid. Vapors may be heavier than air. They can spread along the ground and collect in low or confined areas. Containers may explode when heated.
Extinguishing Media: In case of fire, use water, dry chemical, chemical foam, or alcohol-resistant foam. Use water spray to cool fire-exposed containers. Cool containers with flooding quantities of water until well after fire is out.
Flash Point: 187e deg F (86.11 deg C)
Autoignition Temperature: 400 deg F (204.44 deg C)
Explosion Limits, Lower: 1.2@ 135C
Upper: 23.5@ 182C
NFPA Rating: (estimated) Health: 1; Flammability: 1; Instability: 0

Section 6 - Accidental Release Measures

General Information: Use proper personal protective equipment as indicated in Section 8.
Spills/Leaks: Absorb spill with inert material (e.g. vermiculite, sand or earth), then place in suitable container. Remove all sources of ignition. Provide ventilation.

Section 7 - Handling and Storage

Handling: Use with adequate ventilation. Use spark-proof tools and explosion proof equipment. Avoid contact with eyes, skin, and clothing. Empty containers retain product residue, (liquid and/or vapor), and can be dangerous. Keep away from heat, sparks and flame. Avoid ingestion and inhalation. Store protected from light. If peroxide formation is suspected, do not open or move container. Do not pressurize, cut, weld, braze, solder, drill, grind, or expose empty containers to heat, sparks or open flames.
Storage: Keep away from sources of ignition. Store in a tightly closed container. Store in a cool, dry, well-ventilated area away from incompatible substances.

Section 8 - Exposure Controls, Personal Protection

Engineering Controls: Use adequate ventilation to keep airborne concentrations low.
Exposure Limits

Chemical Name	ACGIH	NIOSH	OSHA - Final PELs

Diethylene glycol monoethyl ether	none listed	none listed	none listed

OSHA Vacated PELs: Diethylene glycol monoethyl ether: No OSHA Vacated PELs are listed for this chemical.

Personal Protective Equipment

Eyes: Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166.

Skin: Wear appropriate protective gloves to prevent skin exposure.

Clothing: Wear appropriate protective clothing to prevent skin exposure.

Respirators: Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.

Section 9 - Physical and Chemical Properties

Physical State: Liquid
Appearance: colorless
Odor: mild odor - fruity odor
pH: Not available.
Vapor Pressure: .14 mm Hg @ 20 C
Vapor Density: 4.64
Evaporation Rate:<0.01 (butyl acetate=1)
Viscosity: 3.9 cP 25 C
Boiling Point: 396 deg F
Freezing/Melting Point:-134 deg F
Decomposition Temperature: Not available.
Solubility: soluble in water.
Specific Gravity/Density:.9902 @20C
Molecular Formula:C6H14O3
Molecular Weight:134.0962

Section 10 - Stability and Reactivity

Chemical Stability: Stable under normal temperatures and pressures. Explosive peroxides may form on concentration. Peroxides can be detonated by friction, impact, or heating.
Conditions to Avoid: Ignition sources, excess heat, strong oxidants.
Incompatibilities with Other Materials: Strong oxidizing agents, strong acids, isocyanates.
Hazardous Decomposition Products: Carbon monoxide, carbon dioxide.
Hazardous Polymerization: Has not been reported.

Section 11 - Toxicological Information

RTECS#:
CAS# 111-90-0: KK8750000
LD50/LC50:
CAS# 111-90-0:
Dermal, guinea pig: LD50 = >32 gm/kg;

Draize test, rabbit, eye: 500 mg Moderate;
Draize test, rabbit, eye: 125 mg Mild;
Draize test, rabbit, skin: 500 mg/24H Mild;
Inhalation, rat: LC50 = >5240 mg/m3/4H;
Oral, mouse: LD50 = 6600 uL/kg;
Oral, mouse: LD50 = 7250 mg/kg;
Oral, rabbit: LD50 = 3620 mg/kg;
Oral, rat: LD50 = 5500 uL/kg;
Oral, rat: LD50 = 7500 mg/kg;
Skin, rabbit: LD50 = 4200 uL/kg;
Skin, rabbit: LD50 = 8.5 ml/kg/2H;
Skin, rat: LD50 = 6 mL/kg;

Carcinogenicity:
CAS# 111-90-0: Not listed by ACGIH, IARC, NTP, or CA Prop 65.

Epidemiology: No information found
Teratogenicity: No information found
Reproductive Effects: Feeding studies with rats have shown fetal effects in the urogenital system.
Mutagenicity: No information found
Neurotoxicity: No information found
Other Studies:

Section 12 - Ecological Information

Ecotoxicity: Fish: Fathead Minnow: 26.6g/L; 96H; Fish: Rainbow trout: LC50 = 13,420 mg/L; 96 Hr.; Unspecified conditionsFish: Bluegill/Sunfish: LC50 = 10,000 mg/L; 96 Hr.; Static conditions, 23 degrees CWater flea Daphnia: LC50 = 4026 mg/L; 48 Hr.; Unspecified No data available.
Environmental: AQUATIC FATE: Diethylene glycol monoethyl ether is not expected to volatilize from water surfaces. TERRESTRIAL FATE: Aerobic screening test data indicate that rapid aerobic biodegradation is likely to be the most important mechanism for the removal of diethylene glycol monoethyl ether from soil. Biodegradation of 48% to 87% were reported in non-acclimated cultures incubated for 20 days. Alcohols and ethers are generally resistant to hydrolysis.
Physical: No information available.
Other: No information available.

Section 13 - Disposal Considerations

Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. US EPA guidelines for the classification determination are listed in 40 CFR Parts 261.3. Additionally, waste generators must consult state and local hazardous waste regulations to ensure complete and accurate classification.
RCRA P-Series: None listed.
RCRA U-Series: None listed.

Section 14 - Transport Information

	US DOT	Canada TDG

Shipping Name:	Not regulated as a hazardous material	No information available.
Hazard Class:		
UN Number:		
Packing Group:		

Section 15 - Regulatory Information

US FEDERAL

TSCA
CAS# 111-90-0 is listed on the TSCA inventory.
Health & Safety Reporting List
CAS# 111-90-0: Effective 4/13/89, Sunset 12/19/95
Chemical Test Rules
None of the chemicals in this product are under a Chemical Test Rule.
Section 12b
None of the chemicals are listed under TSCA Section 12b.
TSCA Significant New Use Rule
None of the chemicals in this material have a SNUR under TSCA.
CERCLA Hazardous Substances and corresponding RQs
None of the chemicals in this material have an RQ.
SARA Section 302 Extremely Hazardous Substances
None of the chemicals in this product have a TPQ.
SARA Codes
CAS # 111-90-0: fire, reactive.
Section 313
This material contains Diethylene glycol monoethyl ether (listed as Glycol ethers), 100.0%, (CAS# 111-90-0) which is subject to the reporting requirements of Section 313 of SARA Title III and 40 CFR Part 373.
Clean Air Act:
CAS# 111-90-0 (listed as Glycol ethers) is listed as a hazardous air p ollutant (HAP).
This material does not contain any Class 1 Ozone depletors.
This material does not contain any Class 2 Ozone depletors.
Clean Water Act:
None of the chemicals in this product are listed as Hazardous Substances under the CWA.
None of the chemicals in this product are listed as Priority Pollutants under the CWA.
None of the chemicals in this product are listed as Toxic Pollutants under the CWA.
OSHA:
None of the chemicals in this product are considered highly hazardous by OSHA.
STATE
CAS# 111-90-0 can be found on the following state right to know lists: Pennsylvania, (listed as Glycol ethers), Minnesota.

California Prop 65

California No Significant Risk Level: None of the chemicals in this product are listed.

European/International Regulations

European Labeling in Accordance with EC Directives
Hazard Symbols:
XI
Risk Phrases:
R 36 Irritating to eyes.

Safety Phrases:

S 26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

WGK (Water Danger/Protection)

CAS# 111-90-0: 1

Canada - DSL/NDSL

CAS# 111-90-0 is listed on Canada's DSL List.

Canada - WHMIS

This product has a WHMIS classification of B3, D2B.

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all of the information required by those regulations.

Canadian Ingredient Disclosure List

CAS# 111-90-0 is listed on the Canadian Ingredient Disclosure List.

Section 16 - Additional Information

MSDS Creation Date: 6/09/1999
Revision #3 Date: 10/03/2005