

LIGO-T940033-00-B



1501 North Division Street
Plainfield, Illinois 60544-8929

Fax No. is: 815 439 6010
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FACSIMILE MESSAGE

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November 10, 1994

To: Larry Jones
LIGO Project Caltech Pasadena, California

Fax No. (818)304-9834

From: M. L. Tellalian Phone (815)439-6517

Plainfield Engineering - PAE

RE: MSDS for Ansul AFFF Foaming Agent
LIGO Design & Qualification Test - Caltech Contract C146

Larry,

Attached is the MSDS for the Ansul AFFF Foaming agent along with a couple of pages from the catalog describing the unit. The unit is being picked up first thing Monday morning and should be in Plainfield by 10:30 am or so. Merichem representatives will be in Plainfield around 1:30 pm. This will give us a little time to work with the unit before Merichem arrives.

I'll fax the lab report for the first sample to you Monday morning.

Regards,

M. L. Tellalian
Plainfield Engineering

bcc: SWP / WLR / LIGO File 4.6.1
MLT - PAE / LIGO File 2.2.2

NOV 11 '94 03:16PM RELIABLE FIRE EQUIP

P.2/6

ANSUL

ANSUL FIRE PROTECTION
MARINETTE, WI 54143-2542

MATERIAL SAFETY DATA SHEET

ANSUL AR-33-D RECHARGE

QUICK IDENTIFIER (In Plant Common Name)

Manufacturer's Name	ANSUL FIRE PROTECTION, WORMALD U.S., INC.	Emergency Telephone No.:	(715) 735-7411
Address:	One Stanton Street, Marinette, WI 54143-2542	Other Information Calls:	Same
Prepared By:	Safety and Health Department	Date Prepared:	June 1, 1989

SECTION 1 — IDENTITY

Common Name: (used on label) (Trade Name and Synonyms)	Ansul AR-33-D Recharge	CAS No.:	N/A
Chemical Name:	N/A This is a Mixture	Chemical Family:	Mixture
Formula:	N/A		

SECTION 2 — INGREDIENTS

PART A — HAZARDOUS INGREDIENTS				
Principal Hazardous Component(s) (chemical and common name(s)):	%	CAS No.	ACGIH TLV	Acute Toxicity Data
Diethylene Glycol Monobutyl Ether (Butyl Carbitol)	5	112-34-5	NDA	Oral LD50 (rat) 4120 mg/kg Dermal LD50 (rat) 6560 mg/kg
PART B — OTHER INGREDIENTS				
Other Component(s) (chemical and common name(s)):	%	CAS No.		Acute Toxicity Data
Dowicide A	0.006	132-27-4		NDA
Proprietary mixture of hydrocarbon surfactants, fluorosurfactants, inorganic salts, high molecular weight polysaccharide not otherwise specified, and water.	94.9	N/A		NDA

SECTION 3 — PHYSICAL AND CHEMICAL CHARACTERISTICS (Fire and Explosion Data)

Boiling Point:	99 °C	Specific Gravity (H ₂ O = 1):	1.003	Vapor Pressure (mm Hg):	Not Determined
Percent Volatile by Volume (%):	Approx. 95	Vapor Density (Air = 1):	Less than 1	Evaporation Rate (Butyl Acetate = 1):	0.37
Solubility in Water:	100%	Reactivity in Water:	Unreactive		
Appearance and Odor:	Straw colored gelled liquid, mild sweet odor.				
Flash Point:	None to boiling	Flammable Limits in Air % by volume:	N/A	Extinguisher Media:	N/A
Special Fire Fighting Procedures:	NONE — THIS IS AN EXTINGUISHING AGENT				
Unusual Fire and Explosion Hazards:	None				

SECTION 4 — PHYSICAL HAZARDS

Stability:	Unstable <input type="checkbox"/> Stable <input checked="" type="checkbox"/>	Conditions to Avoid:	N/A
Incompatibility (Materials to Avoid):	Reactive metals, electrically energized equipment, any materials reactive with water.		
Hazardous Decomposition Products:	None known		
Hazardous Polymerization:	May Occur <input type="checkbox"/> Will Not Occur <input checked="" type="checkbox"/>	Conditions to Avoid:	N/A

SECTION 5 — HEALTH HAZARDS

Threshold Limit Value:	None established by ACGIH or OSHA.		
Routes of Entry: Eye Contact:	May cause mild transient irritation.		
Skin Contact:	May cause mild transient irritation.		
Inhalation:	Inhalation is not anticipated to be a problem.		
Ingestion:	Irritating to mucous membranes. Large oral doses could produce narcosis.		
Signs and Symptoms:	Acute Overexposure: Irritation of the eyes, skin and mucous membranes. Chronic Overexposure: Delayed kidney injury, possible liver damage.		
Medical Conditions Generally Aggravated by Exposure:	Diseases of the kidney and liver.		
Chemical Listed as Carcinogen or Potential:	National Toxicology Program: Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	I.A.R.C. Monographs: Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	OSHA: Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>

SECTION 6 — EMERGENCY AND FIRST AID PROCEDURES

Eye Contact:	Flush with large amounts of water; if irritation persists, seek Medical attention.
Skin Contact:	Wash with soap and water; if irritation persists, seek Medical attention.
Inhalation:	Remove victim to fresh air. Seek Medical attention if discomfort continues.
Ingestion:	If patient is conscious, give large amounts of water and induce vomiting. Seek Medical help.

SECTION 7 — SPECIAL PROTECTION INFORMATION

Respiratory Protection (Specify Type):	Not normally necessary.		
Ventilation:	Local Exhaust: N/A	Mechanical (General):	Recommended
Protective Gloves:	N/A	Eye Protection:	Chemical goggles recommended.
Other Protective Clothing or Equipment:	Eye wash and safety showers are good safety practice.		

SECTION 8 — SPECIAL PRECAUTIONS AND SPILL/LEAK PROCEDURES

Precautions to be Taken in Handling and Storage:	Store in original container. Note incompatibility information in Section 4.
Other Precautions:	Do not mix agents. Avoid skin and eye contact. Avoid ingestion.
Steps to be Taken in Case Material is Released or Spilled:	Rinse floor thoroughly with water as material is slippery. Prevent material from reaching sewers or waterways to avoid nuisance foaming.
Waste Disposal Methods:	Dispose of in compliance with local, state, and federal regulations.

HAZARDOUS MATERIAL IDENTIFICATION SYSTEM RATINGS

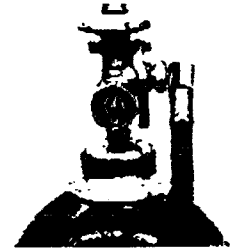
HAZARD INDEX:	
4 Severe Hazard	<u>1</u> HEALTH
3 Serious Hazard	
2 Moderate Hazard	<u>0</u> FLAMMABILITY
1 Slight Hazard	
0 Minimal Hazard	<u>0</u> REACTIVITY

N/A = Not Applicable NDA = No Data Available

ANSUL is a registered trademark

WILL THE POTENTIAL FIRE BE LARGE AT THE START?

Some fires begin small and become large while other fires begin large and stay large. If you must protect against the latter type of fire, the time it takes to put your wheeled extinguisher into operation is critical. Ansul's QUICK-OPENING VALVE cuts down the time required to actuate the unit since the operator need only flip a lever and the extinguisher is immediately pressurized. The Quick-Opening valve eliminates the need to turn a handwheel-type valve to the fully open position.



WHAT MAKES THIS AFFF EXTINGUISHER DIFFERENT?

- Ansul's AFFF unit is completely self-contained and requires no foam pumps. The nitrogen cylinder provides the working pressure and assures the correct flow rate.
- The extinguisher does not require a proportioning system, the agent is premixed. It is specifically designed and tested for Ansul AFFF 3% concentrate.
- The unit holds 33 gallons (125 l) of Ansul AFFF 3%/water mixture and has an average flow rate of 30 gallons per minute (113 liters per minute). Recharge is made easy by use of a fill indicator which assures correct water/Ansul AFFF 3% recharge ratio.

OVER WHAT TYPE OF TERRAIN WILL THE EXTINGUISHER BE MOVED?

When the extinguisher is wheeled over sandy, loose or rough terrain or flooring, WIDE WHEELS provide increased mobility. Special RUBBER TIRES are available for use in the following areas:

- Areas with special flooring (linoleum, tile, wood) which could be damaged by ordinary wheels.
- Volatile areas (such as the petroleum industry) where sparks from the metal wheels could be hazardous.

Rubber tires also allow the extinguisher to be moved with less effort.

WILL THE EXTINGUISHER BE USED IN OFFSHORE APPLICATIONS?

If the wheeled extinguisher will be used in an offshore, marine or coastline application where it will be exposed to corrosive elements, Ansul can provide a CORROSION CONTROL COATING for increased protection against the effects of salt spray. The unit is approved by the U.S. Coast Guard

WHAT ARE THE SPECIFICATIONS?

Model:	AFFF-33-D	Wheels:	6 in. (152 mm) wide, 36 in. (914 mm) diameter
Agent and Capacity:	33 gal. (125 l) - 1 gal. AFFF 3% Concentrate, 32 gals. water	Weight:	Charged: 628 lbs. (282 kg) Shipping: 350 lbs. (157 kg)
U.L. Rating:	20-A:160-B	Dimensions:	Width: 34 in. (864 mm) Height: 57 in. (1448 mm) Length: 47 in. (1193 mm)
Tank:	18 in. (457 mm) O.D., 4 in. (101 mm) fill opening	Test:	600 psi (1517 kPa) hydrostatic, shell, every 5 years 430 psi (2964 kPa) burst, safety relief valve
Cylinder:	Medical "E", 23 ft. ³ (.65 m ³)	Temperature Range:	+32° F (0° C) to +120° F (49° C)
Effective Discharge Time:	1 minute	Range:	25 feet (7.5 m)
Flow Rate:	30 gal./min. (113 l/min.)		
Hose:	1 in. I.D., 50 ft. (15 m) long		

CHECK THESE ANSUL FEATURES:

1. The **SINGLE VALVE** is engineered for fast, easy "one-step" actuation of the extinguisher. Simply turn the single valve to the open position and the unit is pressurized. The nitrogen cylinder's **VISUAL GAUGE** provides an easy-to-read indication of the cylinder pressure.

2. The rugged **FILL CAP** is especially designed so that it can be removed without special tools. It is corrosion resistant and features a pressure relief vent which gives off a warning sound and relieves pressure in the event that the fill cap is loosened while the unit is pressurized. The **FILL CAP GASKET** ensures an airtight seal between the fill cap and the shell. The **FILL OPENING** is large for quick refill.

3. The entire wheeled extinguisher features **WELDED STEEL CONSTRUCTION** and the use of non-corrosive materials for less wear and longer life.

4. The **PRESSURE RELIEF VALVE** located at the top of the tank is a disc type relief. The safety disc bursting pressure is approximately 430 psi (2964 kPa). When using the proper nitrogen cylinder and correct agent level, the internal tank pressure is well below the disc bursting pressure.

5. The bottom skid keeps the extinguisher upright and steady during operation and storage. It also protects the bottom of the shell from impact, vibration and corrosive elements.

6. The aluminum **NAMEPLATE** is glare-resistant for maximum readability. Only vital elements are shown on the nameplate including:

a. Hazard Identification — identifies hazards for which the extinguisher is suited by symbol-letter-color coding.

b. Operating Instructions — simple, easy-to-follow instructions which allow even the novice fire fighter to quickly and correctly put the extinguisher into operation.

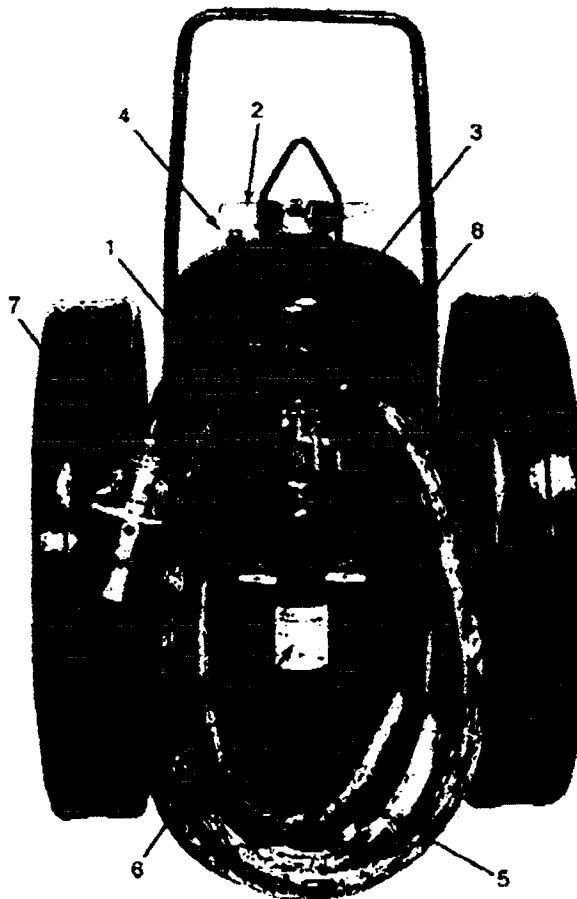
c. After Use Instruction — gives complete blowdown and recharge instructions.

d. Maintenance Instructions — gives basic maintenance instructions for the extinguisher.

7. The **NOZZLE** has all stainless steel internal moving parts to ensure proper operation in all climates and atmosphere.

8. The **HOSE** is made of a special neoprene copolymer which is resistant to the elements and retains its flexibility down to -40° F (-40° C). **HOSE COUPLINGS** are made of copper-free aluminum alloy for strength and resistance to corrosion and cracking.

9. Ansul warrants this extinguisher for **FIVE YEARS** from date of delivery to purchaser against defects in workmanship and materials. **THIS WARRANTY IS IN LIEU OF ALL OTHER WARRANTIES WHETHER EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO FITNESS FOR PURPOSE AND MERCHANTABILITY, AND ANSUL DOES NOT ASSUME, OR AUTHORIZE ANY OTHER PERSON TO ASSUME FOR IT, ANY OTHER LIABILITY IN CONNECTION WITH THE SALE OF ITS PRODUCTS. ANSUL SHALL NOT BE LIABLE FOR CONSEQUENTIAL OR SIMILAR DAMAGES.**



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RELIABLE FIRE EQUIPMENT

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ALSIP, ILLINOIS 60658

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