

AFFF

JACKSONVILLE POLLUTION PROBLEM

A001198



Author: DARWIN_ROBERT at p-05_01

Date: 10/14/97 10:23 AM

Priority: Normal

CC: nsdsl@navtap.navy.mil at INTERNET, JSCHROED^X_at_pwcoa@jaxmail.nav.mil at INTERNET,
glassd@n4.opnav.navy.mil at INTERNET

TO: COMNAVBASE JAX <njnw5@navtap.navy.mil> at internet

Subject: Re: Changes or new research on AFFF and reduce Env risk

We have evaluated some of these so called "environmentally fiendly foams" and found them to be seriously deficient to mil-spec AFFF in regards to fire fighting (usually they lack the ability to rapidly extinguish pool fires which is whole purpose of AFFF). As it now stands, there are no definitive mil-spec changes on the table but there are some studies that may bear fruit relative to AFFF environmental improvements.

The Air Force at Tyndall AFB has for the past couple years received R&D funding to evaluate possible environmental enhancements to AFFF. The intent was to develop specific recommended changes to the AFFF mil-spec, though their final report isn't out yet. Also, Hughes Associates received some seed money from NAVAIR last year to assess possible AFFF environmental improvements to AFFF, and hopefully this will be expanded under FY-98 funding. Finally, the current DOD supplier of AFFF, the 3M Company, is funding their own in-house development of environmentally friendly AFFF and may be submitting a new formulation for mil-spec qualification sometime this year.

In the meantime, DOD is continuing to procure AFFF per the existing mil-spec, Mil-F-24385F.

R.L. Darwin
NAVSEA 03G2
703-602-5084 x207

Reply Separator

Subject: Changes or new research on AFFF and reduce Env risk

Author: COMNAVBASE JAX <njnw5@navtap.navy.mil> at internet

Date: 10/6/97 1:03 PM

I am interested in what changes in the AFFF MILSPEC are approved for using the various commercially available "ENVIRONMENTALLY FRIENDLY FOAM" to replace or substitute for the approved AFFF.

AFFF is causing problems with Navy shore wastewater treatment facilities either by accidental release from an aircraft hanger bay or from pier-side risers of oily wastewater or Sewage water.

I am sure you and NAVSEA have heard of this problem and can help our shore bases with a solution.

Is AFFF being studied for a better (i.e. less environmental impact) firefighting media???

If not, what actions are being done to prevent AFFF discharges entering shore utility systems??

What is the Navy's 21 century ship answer??

From an earlier email, this is #1 issue for the NAVY ENVIRONMENTAL

Author: COMNAVBASE JAX <njnw5@navtap.navy.mil> at internet
Date: 10/6/97 1:03 PM
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TO: DARWIN_ROBERT at P-05_01
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glassd@n4.opnav.navy.mil at INTERNET
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From an earlier email, this is #1 issue for the NAVY ENVIRONMENTAL LEADERSHIP PROGRAM at NavSta Mayport in FY-98. Any assistance would be appreciated.

MICHAEL DAVENPORT
10-6-97

Michael Davenport

Author: Fred Williams <fwilliams@itd.nrl.navy.mil> at internet
Date: 2/26/98 7:26 AM
Priority: Normal
TO: DARWIN_ROBERT at P-05_01, mxel00f@triton.kdh.odu.edu at INTERNET,
clarkke@efdlant.navfac.navy.mil at INTERNET
Subject: <no subject>
I have trouble believing 5 gallons of AFFF could cause the Jacksonville
problem.
Fred

>To: "Healing, Richard F" <Healing.Richard@hq.navy.mil>
>From: Fred Williams <fwilliams@itd.nrl.navy.mil>
>Subject: RE: Firefighting foam suspected in area
>
>At 11:34 PM 2/25/98 -0500, you wrote:
>>Elsie, Fred x2: Even if AFFF is not the culprit, we need to be looking
>>diligently for a substitute -- even if only for land based use. This
>>type event will only get more attention in future. Local fire fighters
>>in Alexandria and Fairfax are using a non-toxic foam (National Foam),
>>that is apparently used fairly widely in the US. We all know we are an
>>easy target ... and in some cases a favorite one.
>>
>>This is FYI. Fred W.: Could you give us a few groups on what is
>>presently being done at NRL to find a replacement for AFFF, please?
>>Thanks RFH
>>

>>> -----
>>> From: Crowson, Fred
>>> Sent: Wednesday, February 25, 1998 4:48 PM
>>> To: Healing, Richard F
>>> Subject: FW: Firefighting foam suspected in area
>>>
>>> Dick,
>>>
>>> FYI. I will file a hard copy in the "FOAM" folder for future
>>> reference.
>>>
>>> Fred
>>>
>>> -----
>>> From: Rout, Clarence A. [SMTP:RoutCA@efdlant.navfac.navy.mil]
>>> Sent: Wednesday, February 25, 1998 07:19 AM
>>> To: Clark, Kenneth E.; Rakowski, Paul A.; Robbie Robinson (E-mail);
>>> Robinson John (E-mail); Tom Dolen (E-mail); Vance Aydlett (E-mail);
>>> McDaniel Cliff (E-mail); Lt. Dave Jackson (E-mail)
>>> Cc: Larry Tallon (E-mail); Larry Royal (E-mail); Kevin King
>>> (E-mail); Kenny Barber (E-mail); Haraldur Stefansson Halli (E-mail);
>>> Garry Alston (E-mail); Crowson, Fred; David Butler (E-mail); Dan
>>> Marshal (E-mail); Carr Bobby (E-mail); Bud Williams (E-mail); Bob
>>> Bright (E-mail); Anthony Ferraro (E-mail)
>>> Subject: FW: Firefighting foam suspected in area
>>>

>>> -----Original Message-----
>>> Subject: Firefighting foam suspected in area bird deaths
>>>
>>> Author: R.DOOLIN/GruChasn@internet.uscg.mil at INET
>>>
>>> Date: 2/17/98 9:42 AM
>>>
>>> Firefighting foam suspected in area bird deaths
>>>
>>> By Derek L. Kinner
>>> Times-Union staff writer
>>>
>>> Two days before the first of nearly 400 dying birds appeared on
>>> Northeast Florida's waterways, Jacksonville firefighters doused a car
>>> fire at Blount Island with foam known to be deadly to birds. State
>>> and federal investigators are trying to determine whether firefighting
>>> foam is responsible for the deaths of more than 175 birds from
>>> Fernandina Beach to St. Augustine. They also are looking at other
>>> possibilities and have sent dead birds to laboratories for analyzing.
>>> A federal wildlife agent said it is not illegal for firefighting foam
>>> to be used, even if it spills into waterways. But if the foam harms
>>> migratory birds, that would be illegal under federal law, he said.
>>> The fire, which occurred early Jan. 1, involved 14 cars. Fire

Dr Fred Williams
Director, Navy Technology Center
Safety and Survivability
Code 6180
Naval Research Laboratory
Washington, DC 20375-5000
Tel (202) 767-2476
Fax (202) 767-1716
<http://chemdiv-www.nrl.navy.mil/6180/6180.html-ssi>

Glen Brewer
NAS JAX

Tring ofc

DSN 942-2313 X9

- NAS Tax treatment plant

"ECO Foam"

NAVFAC policy:
All enviro-safe
foam for

If UL
listed as an
AFFF

- Structural Pumps

- CFB "hot dull"
training

NA TOPS 5.8.6
2 Ends Month
per man

FAX COVER PAGE

To Fax Number: 1-703-602-5089

Attention: Mr. Darwio

from Glen Brewer

FAX 80-942-3659



JACKSONVILLE
FLORIDA

FROM:

Fire Chief, Naval Air Station Jacksonville

Code 600, Box 133

Jacksonville, Fl. 32212-0133

Fax Numbers: AV 942-3659 Commercial (904) 772-3659
Voice Numbers: AV 942-2452 Commercial (904) 772-2451

Page 1 of 7 pages

ISCS
1-800-401-5573
Call George

ISCS

*Fire & Gas Detection Systems
Consulting/Engineering
Suppression Systems*

International Fire & Gas Sales & Consulting Services, Inc.

68 C Old Hedding Road
Epping, NH 03042 USA

Tel: (603) 679-8644

800-401-5573

Fax: (603) 679-8501

George K. Telford

Military & Midwest Regional Manager

2517 N. Chadsworth
Wichita, KS 67205

Tel: (316) 721-6233

Fax: (316) 721-6343



ECO-FOAM™ AFFF



● Toxicology

LC₅₀ (Rainbow trout)
96 Hour HNOEC LOEC
 15.8 g/l⁻¹ 5 g/l⁻¹ 50 g/l⁻¹

LC₅₀ (Flat Minnow)
24 Hour 48 Hour
 >100% >100%

72 Hour 96 Hour
 >100% 1719.31 ppm

LC₅₀ (C. D. b. b. a)
24 Hour 48 Hour
 1223.06 ppm 699.78 ppm

● Ecology

BOD₅/COD BOD₂₈/COD
 1% = 66.03 7 Day = 48.5
 3% = 66.85 14 Day = 67.5
 6% = 55.08 21 Day = 82.3
 28 Day = 65.4

● UL Type III Application Rates

Fuel Group	Proportioning
Acetone	3%
Ethanol	3%
Methanol	3%
Ketones	3%
Methyl Ethyl Ketone	3%
Benzene	3%
Diesel Fuels	3%
MTBE/Gasoline Blend	3%
Hydrocarbons	3%
Heptane	3%
Toluene	3%
Xylene	3%

● Applications and Use

Class A (fibrous) materials:

Meter agent at 0.25% - 3% in fresh or salt water and apply foam solution into fire. Suitable for all types of fibrous combustibles, e.g., wood, textiles, paper, plastics, rubber, cloth, etc... For brush fires, meter agent at 0.25% - 1% in solution in water and apply to cover fires.

Class B (hydrocarbon) Liquids:

Flammable hydrocarbon fires can easily be extinguished by using Eco-Foam 3% in solution in fresh or salt water. Aspirated or non-aspirated nozzles can be used. Where highly flammable or volatile fuels are encountered, use of aspirated nozzles is strongly recommended. Extinguishment can be accomplished at 0.04% density or less (depending on fuel types encountered).

Equipment:

All standard/normal fire fighting appliances including monitors, can be used. Aspirated or non-aspirated nozzles may be used for successful results.

Special Handling Precautions:

NONE: If allergic reaction occurs, wash with water.

Precautions:

Not recommended for use on alkaline substances, Class D (Metal) fires, or Class C (Electrical) fires. When in doubt contact manufacturer/distributor and/or refer to technical manuals. Recommended storage temperatures are between 35°F (2°C) and 120°F (49°C).

ISCS International Fire & Gas Sales & Consulting Services, Inc.

68C Old Hedding Rd.

Epping, NH 03042

Phone: (603)-679-8644 or 1-800-401-5573

Fax: (603)-679-8501 E-Mail: MR03177@aol.com

Manufactured by Firex2, Inc.



ECO-FOAM™ AFFF



Prescription For The Environment



General Description

Eco-Foam is the World's most advanced environmental fire fighting foam designed for the modern needs of firefighters. It is non-corrosive, biodegradable, and has an extremely low level of toxicity. It can be metered, injected, or premixed and can be deployed through all conventional equipment. Eco-Foam is completely compatible with any equipment that can pump water, making it ideal for a variety of applications. It also can be used on Class A and B fires and is DOT rated as a non-hazardous material. Eco-Foam eliminates the need for containment and disposal as is required with other AFFF's.



Eco-Foam can be applied using water spray equipment for the rapid control of spill fires and is also suitable for sprinkler and water mist systems. Where highly volatile fuels are encountered, use of aspirated nozzles is recommended. Eco-Foam is the ideal fire fighting agent for use wherever Class B Hydrocarbon fires are present such as petrochemical refineries, distribution deposits, harbors, chemical industries, airports, road and rail tankers, rubber manufacturing and storage facilities. Eco-Foam can also be metered down for Class A fires. The chemical penetration to any Class A fire is much greater when using Eco-Foam as an additive. It may be used as low as 1/4% metered rate to water to produce a faster extinguishment effect than just water alone.

Eco-Foam has a storage life in excess of twenty (25) years when stored in the recommended conditions. The foam should be stored in approved, sealed containers. No phase separation or sedimentation has been noted. Eco-Foam is manufactured without anti-freeze and can withstand temperatures as low as 28 F(-2.2C) without freezing. Freezing and thawing has shown no effect on the agent's performance. Eco-Foam is compatible with AFFF's and FFFP's. No adverse reaction has been noted. It can be applied simultaneously to a fire situation where other types of foam are being used.



LISTED
FOAM LIQUID CONCENTRATE
7R05
UL 162



MATERIAL SAFETY DATA SHEET

FX2:001

SECTION I

GENERAL INFORMATION

NAME & SYNONYMS

ECO-FOAM™

Firefighting Foam

TRADE NAME & SYNONYMS

Foam Surfactant

CHEMICAL FAMILY

Surfactants

FORMULA

Complex

PROPER DOT SHIPPING NAME

Not Required (DOT Shipping Class 55)

DOT HAZARD CLASSIFICATION

None

MANUFACTURER

Firex2, Inc.

P.O. Box 14642

Reading, Pennsylvania 19612

MANUFACTURER'S PHONE

Home Office (610) 929-4600

Fax (610) 929-4550

SECTION II

INGREDIENTS

PART A

HAZARDOUS INGREDIENTS

None

PART B

COMPOSITION / INGREDIENTS

Sodium Sulfate

Water

Fluoro Polymer

Ethanol

CAS No. 142-31-4

CAS No. 7732-18-5

CAS No. (Preparation only no number)

CAS No. 64-17-5

SECTION III

PHYSICAL DATA

Density

8.48 lbs./Gal.

Chemical Formula

Complex

Molecular Weight

Not Determined

Decomp Product

None

Refractive Index

Not Determined

Melting Point

None

Vapor Pressure

None

Saturation Level

82.5% H₂O

Ignition Temp.

None

Explosive Temp.

None

Decomp Temp.

None

Hydroscopic

None

Freezing Point

No

Viscosity of Liquid

28°F (-2°C)
1.166 Cps @ 70°F (21°C)

Specific Gravity

1.016

Flash Point

None

Solubility in Water

100%

pH

7.88

Color

Translucent / light yellow

SECTION IV**FIRE & EXPLOSION HAZARD DATA**

Unusual Fire & Explosion Hazards
Extinguishment Media
Special Firefighting Procedures

None
Non-Flammable
None

NOT TO BE USED ON COMBUSTIBLE METAL OR ELECTRIC FIRES

SECTION V**HEALTH HAZARD DATA****PART A**

1. Inhalation: Product normally is not inhaled unless present as a mist. If inhaled as a mist, move to fresh air. No adverse effects have been documented or noted.
2. Ingestion: Product should not be ingested. No adverse effects have been documented or noted.
3. Skin: No adverse effects have been documented or noted.
4. Eyes: No adverse effects have been documented or noted under normal usage. Exposure to the liquid concentrate should be rinsed with water.

PART B**Toxicological Information:**

LC₅₀ (Rainbow trout)

96 Hour HNOEC
15.8 g/l 5 g/l

LOEC
60 g/l

LC₅₀ (Flat Minnow)

24 Hour 48 Hour
>100% >100%

72 Hour
>100%

96 Hour
1719.31 ppm

LC₅₀ (C. Dubia)

24 Hour 48 Hour
1223.06 ppm 699.78 ppm

PART C**Ecological Information:**

BOD₅ / COD

1 % = 88.03
3 % = 66.65
6 % = 55.06

BOD₂₀ / COD

7 Day = 48.5
14 Day = 67.5
21 Day = 82.3
28 Day = 85.4

SECTION VI**REACTIVITY DATA**

Stability

Incompatibility

Stable

Will not occur

SECTION VII**EMERGENCY FIRST AID PROCEDURES**

- A. Inhalation: If inhaled as a mist, move to fresh air. No adverse effects have been documented or noted.
- B. Ingestion: Dilute by drinking two glasses of water.
- C. Skin Contact: If allergic reaction occurs, wash with water.
- D. Eye Contact: Wash eyes with running cold water.

SECTION VIII**SPILL OR LEAK PROCEDURES**

A. Spills may be mopped, or soaked up using inert absorbent material e.g.: sand, or diatomaceous earth. Wash down spill area with water.

B. Waste Disposal: As prescribed by law under the "Clean Streams Act", any quantities of any material other than water that may become involved in the water table or streams constitutes a reportable incident.

C. Environmental Hazards: None

SECTION IX**HANDLING AND STORAGE PRECAUTIONS**

No special precautions are necessary for handling this mixture other than those given above.

No special precautions are necessary for storing this material.

SECTION X**DOT SHIPPING REQUIREMENTS**

Shipping Name

ECO-FOAM

Identification Number

None

Hazard class

Non-hazardous

Warning Labels Required

None

Dot Shipping Class

#55

Date MSDS Prepared

September 1, 1995

Revised: May 13, 1997

NOT HAZARDOUS MATERIAL ACCORDING TO THE FOLLOWING REGULATIONS:

GTQVSee IMDG CODE UN-No ICAO / IATA DGR GGVG/GGVs RID/ADR ADNR

The information presented herein is believed to be factual as it has been derived from the work and opinions of persons believed to be qualified experts; however, nothing contained in this information is to be taken as a warranty or representation, express or implied, for which Fire2, Inc. bears legal responsibility. The user should review any recommendations in the specific context of the intended use to determine whether they are appropriate.

Prepared By:

Fire2, Inc.

P.O. Box 14642

Reading, PA 19612

USA

TEL: (610)-929-4800

FAX: (610)-929-4550

Bill Leach
Comments to Morehouse

Jim Raber
French Visit 413-
4938

~~L Bryant @ NASJAX.ORG Attn: Brewer
Glen Brewer
NAS JAX Turn off~~

~~Emerson Foam~~

~~DSN 942 2313 X8
or X3~~

~~Bill Leach
Lithium Fire Li Battery Fires~~

INEFFECTIVE. IT WILL BE APPROX ONE MONTH BEFORE THE SEWAGE TREATMENT
PLANT CAN BE RESTORED TO PEAK EFFICIENCY. AFFF CAN NOT BE TOLERATED
IN EITHER THE CHT OR OILY WASTE/WASTE OIL SYSTEM, AS BOTH FEED INTO
THE SEWAGE TREATMENT PLANT. AFFF CONTAMINATED LIQUIDS MUST BE
DISPOSED OF CORRECTLY.//

BT

#0865

NNNN

00L(1)INFO FOR COMNAVSEASYSOM

00T(1) 03G(1) 03G2(1) 03V(1) 04MS(1) 071(1) 00(1)

02(1) 3D9MED(1) 074(1) 91E(1) 91L(1) PMS325G(1)