DEPARTMENT OF THE AIR FORCE
AIR FORCE CIVIL ENGINEER CENTER
TYNDALL AIR FORCE BASE FLORIDA

22 August 2016

MEMORANDUM FOR ALL AIR FORCE FIRE DEPARTMENTS AND FIREFIGHTERS

FROM: AFCEC/CXF
139 Barnes Drive, Suite 1
Tyndall AFB, FL 32403-5319

SUBJECT: Replacement and Disposal of Legacy Aqueous Film Forming Foam (AFFF)

Reference: SAF/IEE Memo, AFFF Disposal and Replacement - Crash Response Vehicles, dated 9 Mar 16

1. The Air Force is totally committed to protecting human health and the environment so we are taking aggressive steps to replace our legacy AFFF with a new environmentally responsible six carbon chain formula and incinerating our existing stockpile. In accordance with the SAF/IEE memo provided at Attachment 1, we were directed to secure required funding and take specific actions. This memo provides guidance on the replacement and disposal of the legacy AFFF in our Fire Emergency Services Flights and includes other key initiatives associated with AFFF testing and the future use of AFFF.

2. As the Air Force Fire Chief, I am asking all Air Force firefighters to support me and the Air Force by assuming a leadership position, lead by example and be part of the solution because we understand the importance of using AFFF to save lives and property to include protecting our own lives during fire fighting operations involving hydrocarbon fuels where we use AFFF. We work with AFFF on a day-to-day basis, we use it in our vehicles, handlines and turrets and during large scale fire incidents we rapidly resupply our fire vehicles with it. We have received the proper training, we know how to handle AFFF and we have the required Personal Protective Equipment necessary to perform the tasks explained in Attachment 2 so I am soliciting your total support. This is important to human health, the environment and equally important to us as fire service professionals because AFFF is an integral part of our toolbox. To assist you with this effort, we have attached a copy of the Phos-Chek 3% AFFF information sheet (Attachment 3) along with a copy of the Safety Data Sheet (Attachment 4).

3. AFCEC/CXF awarded a contract to bulk purchase and deliver new Qualified Product List Mil-Spec approved (Mil-F-24385) AFFF to all Air Force installations which includes all active duty, Air Force Reserve and Air National Guard fire departments including our deployed locations in the AOR. Specifically, we purchased 418,300 gallons of new six carbon chain AFFF that is Perfluorooctane sulfonic acid (PFOS) free and contains little or no Perfluorooctanoic acid (PFOA) from ICL Performance Products. The contract was awarded for $6.2M and we anticipate deliveries to begin on 22 August 2016. All total we are disposing of 619,626 gallons of old legacy AFFF and replacing our operational stockpiles with a new environmentally responsible formula by 15 December 2016 or sooner if possible.

4. AFCEC/CZ is working with Defense Logistics Agency (DLA) - Disposition Services on the AFFF disposal contract. The first phase of the contract includes delivering empty storage totes to our fire stations that will be used to collect the legacy AFFF and the effluent associated with rinsing the foam tanks. When the contractor drops off the totes they will pick up the fire station stockpile (backup supply) of AFFF and take it to be incinerated. Firefighters will then remove the legacy AFFF and effluent from our vehicles and place it into the empty storage totes. Once this is complete, the second phase of the contract involves the contractor coming back to pick up any and all legacy foam and taking it to the approved disposal facility.

5. DLA awarded a $4.7M contract to W.S. Darley to modify our fire vehicles with specialized equipment that will allow us to conduct daily fire vehicle operational checks and required National Fire Protection Association Standard 412 and 414 annual foam tests without discharging AFFF into the environment. The contract includes purchasing 167 Eco-Logic AFFF test carts with required hoses, fittings and user's manuals. The kit also includes required fire vehicle modification parts, retrofitting 806 fire vehicles with required plumbing connections and providing two days of customer-focused training on how to safely and effectively use the new system.

6. It will take approximately 15 months to retrofit the 806 fire vehicles. We are exploring options to see if we can reduce the timeline associated with retrofitting our fire vehicles. The manufacturer is currently fabricating the Eco-Logic test carts and assorted fire vehicle retrofit kits. The first batch of test carts and retrofit kits will be available for delivery and installation starting in October 2016 as explained the attached step by step procedures.

7. Until further notice, we will continue to restrict the use of AFFF to real world emergencies only. We will also continue to treat any AFFF discharge as a HazMat spill that will be managed and cleaned up to minimize the threat and potential impact on human health and the environment.

8. The AFCEC/CO Fire Protection Engineers have also developed several courses of action to address the AFFF in our aircraft hangar fire suppression systems. Air Force leaders are currently evaluating those options to determine the best way forward.

9. I cannot overstate the importance of this initiative to the Air Force and entire Department of Defense. If you have questions on this important initiative, please contact my POC Mr. Kevin Matlock at DSN 523-6442 or by email at Kevin.Matlock.1@us.af.mil. Thanks for your support on this Air Force, Air Force firefighter and general public safety high visibility special interest item.

James E Podolske Jr.

JAMES E. PODOLSKE JR, GS-14, DAF
The Air Force Fire Chief

4 Attachments
1. SAF/IEE AFFF Disposal and Replacement - Crash Response Vehicles Memo
2. AFFF Step by Step Procedures
3. Phos-Chek 3% AFFF Information Sheet
4. Phos-Chek 3% Safety Data Sheet

DEPARTMENT OF THE AIR FORCE
WASHINGTON, DC

OFFICE OF THE ASSISTANT SECRETARY

MAR 0 9 2016

MEMORANDUM FOR AFCEC/CL
AFIMSC/CC
AF/A4
NGB/CF

FROM: SAF/IEE
1665 Air Force Pentagon
Washington, DC 20330-1665

SUBJECT: AFFF Disposal and Replacement – Crash Response Vehicles

Perfluorinated Chemicals (PFCs) are a class of emerging contaminants that have become an environmental concern across the Air Force and DoD. The U.S. Environmental Protection Agency (EPA) has issued drinking water Provisional Health Advisories for two PFCs: perfluorooctanoic acid (PFOA) and perfluorooctane sulfonate (PFOS). PFOS and PFOA are associated with legacy C8-based formulations of Aqueous Film Forming Foam (AFFF) and are driving large environmental investigation and response financial requirements. Replacing C8-based AFFF used in crash response vehicles is a top Air Force priority to prevent and minimize future environmental liabilities. Effective immediately, I am directing AFCEC to work with AFIMSC to secure the funding necessary to take the following actions:

- Centrally purchase alternative, MILSPEC-approved C6-based AFFF to replace C8-based firefighting agent used in crash response vehicles
- Drain, rinse and containerize C8-based AFFF and rinse effluent from crash response vehicles
- Utilize Defense Logistics Agency contracts to dispose of C8-based AFFF and rinse effluent by incineration
- Modify vehicles with a no-discharge foam testing system to ensure compliance with National Fire Protection Association standards.

These actions apply to the entire fleet of Active Duty, Guard and Reserve vehicles. If you or a member of your staff has any questions, please contact Daniel Kowalczyk, SAF/IEE, at (703) 697-1198 or daniel.f.kowalczyk.ctr@mail.mil.

MARK A. CORRELL, P.E.
Deputy Assistant Secretary of the Air Force
(Environment, Safety, and Infrastructure)

Attachment 1

Air Force Aqueous Film Forming Foam (AFFF) Initiative
Step by Step Procedures

Note: It is vitally important that all Air Force FES Flights execute the specific actions required below with absolutely no exceptions or deviations. Thank you so much for your support.

1. To make sure all Air Force firefighters are on the same page of the playbook we ask that you conduct documented training classes for all shifts concerning this initiative. During the class we want you to read them the cover memo, the SAF/IEE memo, these step by step procedures and go over the AFFF information sheet and associated Phos-Check Safety Data Sheet. Additionally, please include your base specific plans for how you plan to take your vehicles out of service to complete the tasks required below to minimize degrading your local emergency response capability.

2. Take delivery of the new C_6 AFFF. For planning and information purposes, the new AFFF is being prepared for delivery to our long lead time locations such as PACAF, USAFE and some AFSPC locations. After the initial shipments, the AFFF will be shipped to those locations where the Air Force is currently providing mitigation actions but we expect the foam to be delivered to all Air Force locations in 10 weeks or less.

3. Verify the quantity received then send an email message to Mr. Kevin Matlock at Kevin.Matlock.1@us.af.mil confirming that you received your new AFFF along with the amount you received. Anytime you are asked to send Mr. Matlock an email message during this process please send a courtesy copy of your email message to your respective Detachment FES representative so they are kept in the loop on this vitally important Air Force level initiative.

4. Store the AFFF in the fire station until you have sufficient empty totes delivered to you as part of the AFCEC/CZ disposal contract to collect the existing legacy AFFF and waste water effluent which will be explained in detail below.

5. Prepare your existing AFFF backup supply of 5 gallon pails and 55 gallon drums to be taken away for incineration. The incineration disposal method is the most environmentally safe way to eliminate future health and environmental risks associated with AFFF. The legacy backup supply AFFF will be taken away when the contractor drops off your empty totes. Do not retain any of the legacy AFFF. It all must be turned in for disposal even if for some reason your new AFFF has not arrived yet.

6. Once you receive your new AFFF and the required empty totes conduct the following actions in 30 calendar days or less:

a. Using appropriate Personal Protective Equipment and in accordance with the applicable Fire Vehicle Technical Order or Manufacturers Technical Manual drain the existing AFFF from all fire vehicles, foam trailers and foam tanks and place it into the empty storage totes that were provided to you and mark them “AFFF for Disposal.”

b. Fill the fire vehicle AFFF tank completely with water and drive the vehicle for 5 minutes taking various right and left turns and starting and stopping so that you can effectively free up the residual foam contained in the foam tank and associated piping. This step is essential because the AFFF in many of our vehicles has been in these vehicles for 10 to 15 years. Once you have driven the vehicle the required 5 minutes let the agent in the foam tank settle for a few minutes then drain the water and residual foam (effluent) in the foam tank into an empty storage tote and mark it "AFFF Rinse Water for Disposal." This process is required to be completed a minimum of three times. **Note**: Foam trailers and foam storage tanks are not considered vehicles, therefore the AFFF stored in the trailers/tanks are not required to follow the three rinse procedure described above.

c. Once you have completed the required steps above, fill the fire vehicle foam tanks with the new C_6 AFFF. A copy of the Phos-Chek 3% AFFF information sheet is provided at Attachment 3 along with a copy of the Safety Data Sheet provided at Attachment 4.

d. Ensure that all of the storage totes marked for disposal are located in one location inside or outside the fire station organized and ready for pickup and transport to the disposal facility.

e. Send Mr. Matlock an email message confirming that the new C_6 AFFF has been loaded into your fire vehicles and that the remaining AFFF has been placed in storage as part of your fire department resupply capability. Based on the quantities you provided to us during our data calls we have ordered enough AFFF for you to completely fill each fire vehicle foam tank and have one complete resupply for backup purposes.

7. Take delivery and store the new Eco-Logic unit and then send an email message to Mr. Matlock confirming that you received your new Eco-Logic unit.

8. The next step in the process involves a contractor and/or Air Force fire vehicle mechanics retrofitting our ARFF fire vehicles with various fittings and connections that will allow you to use the Eco-Logic system to conduct operational and annual fire vehicle foam system tests without discharging foam into the environment. The contractor will start off with the bases listed below so they can get the vehicle retrofit process down pat on each of the configuration types we have available in the Air Force before venturing out across the Air Force and publishing a vehicle retrofit service bulletin that our mechanics can follow to assist us with this part of the process. The vehicles they will retrofit in priority order are: Tyndall, Eglin, Hurlburt, Gulfport ANGB, Joint Base Charleston, Jacksonville ANGB and Robins AFB.

9. Once the ARFF vehicles have been retrofitted two days of customer focused training will be provided to your firefighters on how to use the new Eco-Logic system.

10. Send Mr. Matlock an email message confirming that all of your ARFF vehicles have been retrofitted and that the required Eco-Logic training is complete.

Thanks for your support – We appreciate your willingness to work with us on this.

PHOS-CHEK
FIRE RETARDANT | FOAM | GEL

Phos-Chek 3% AFFF

3% AFFF CLASS B FOAM CONCENTRATE

1. **DESCRIPTION.** Phos-Chek 3% Aqueous Film Forming Foam (AFFF) concentrate is a mixture of water, hydrocarbon surfactants, solvents, and C6 fluorosurfactants. This C6 based AFFF is an environmentally responsible, next generation Aqueous Film Forming Foam (AFFF) product for use on Class B hydrocarbon fuels that have low water solubility. This new formulation demonstrates ICL Performance Products' commitment to superior firefighting performance and environmental responsibility.

   The pure C6 Phos-Chek 3% AFFF is designed for rapid control and knockdown by producing a thin aqueous film that minimizes vapor release, a foam blanket that separates the fuel from the air, and continual draining of water from the foam blanket provides cooling to the fuel surface.

2. **APPLICATIONS.** Phos-Chek 3% AFFF may be used with low expansion foam equipment (nozzles, monitors, foam chambers, etc.), non-aspirating devices (water spray nozzles and standard sprinklers) and medium expansion foam devices to fight fires involving Class B hydrocarbon fuel fires such as crude oil, aviation fuels, diesel, etc. It is not suitable for use on polar solvents or water miscible fuels such as alcohols, ketones, esters, and ethers.

TYPICAL PHYSICAL PROPERTIES (Concentrate)	
Specific gravity @ 68⁰ F (20⁰ C)	1.02
pH	8.0 ± 0.5
Viscosity	2-10 cps
Lowest temperature for use	23⁰ F
Freezing point	23⁰ F

TYPICAL PROPERTIES (Solution)	
Dilution rate	3%
Surface tension at @ 68⁰ F (20⁰ C)	16.5 ± 0.5
Interfacial tension with cyclohexane at @ 68⁰ F (20⁰ C)	3.5 ± 1.0
25% Drain Time (minutes)	3:30

3. **APPROVAL CERTIFICATIONS.** UL 162 and EN 1568-3 (Class IB) listed

4. **STORAGE AND HANDLING.** The concentrate should be stored at temperatures between 23˚F (-5˚C) and 122˚F (+50˚C), preferably in the original containers, approved bladder tanks, stainless steel, high density polyethylene, fiberglass or epoxy lined tanks. Concentrate piping acceptable materials of construction include stainless steel (either 304 or 316), some plastic piping including fiberglass and PVC, red brass, and black iron as long as the system is completely flooded eliminating the air/foam concentrate/carbon steel interface. Avoid permanent contact with carbon steel, iron, some copper alloys, & aluminum when the piping material and concentrate will be exposed to air. Galvanized piping is not recommended for AFFF piping systems.

   Foam concentrates are subject to evaporation, which accelerates when the product is exposed to air. Storage tanks should be sealed and fitted with a pressure vacuum vent to prevent free exchange of air.

5. **SHELF LIFE, INSPECTION AND TESTING.** The shelf life of any foam concentrate is maximized by proper storage conditions and maintenance. Factors affecting shelf life are wide temperature changes, extreme high or low temperatures, evaporation, dilution, and contamination by foreign materials. Properly stored Phos-Chek AFFF Class B foam concentrates should have no significant loss of firefighting performance for 20+ years. However, the National Fire Protection Association (NFPA) recommends annual testing of all firefighting foams.

6. **PACKAGING.**

ORDERING INFORMATION (LBS./kg.)		
	LBS.	kg.
5 gallon pails (19 liters)	42.5	19.3
55 gallon drums (208 liters)	467.9	212.7
265 gallon reusable tote tank (984 liters)	2254.3	1024.7

ICL Performance Products
Where needs take us

Attachment 3

PHOS-CHEK®
FIRE RETARDANT | FOAM | GEL

Phos-Chek 3% AFFF

3% AFFF CLASS B FOAM CONCENTRATE

HANDLING PRECAUTIONS.

- **FOR DETAILED SAFETY INFORMATION,** please refer to the MSDS.
- **Precautionary Measure and First Aid:** Handle in accordance with good industrial hygiene and safety practices. These practices include avoiding unnecessary contact and removal of the material from the eyes, skin and clothing.
- **Eye Protection:** As a good industrial practice, the use of chemical goggles is recommended. If in the eyes, flush immediately with water. Eye flushing equipment should also be available.
- **Skin Protection:** Wear protective gloves when handling concentrate to minimize skin contact. Wash hands and contaminated skin after handling.
- **Respiratory Protection:** None required.
- For complete MSDS, visit **www.phoschek.com**

For more information, contact any of our worldwide ICL Fire Safety offices or visit us at www.phos-chek.com

United States
ICL Performance Products
10667 Jersey Blvd.
Rancho Cucamonga, CA 91730
Tel: (800) 682-3626
(909) 983-0772
24 Hrs: (909) 946-7371
Fax: (909) 984-4770

Canada
ICL Performance Products Canada LTD
3060 Airport Road
Kamloops, BC
Canada, V2B 7X2
Tel: (800) 665-2535
(250) 544-3530
Fax: (250) 554-7788

Europe
Auxquimia S.A.U.
Poligono Industrial de Baiña,
Parc, 23
33682 Baiña-Mieres
Asturias - Spain
Tel: +34 985 242945
Fax: +34 985 253809

04-2015-1

ICL Performance Products
Where needs take us

www.phoschek.com

Responsible Care®
Good Chemistry at Work

SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1 Product identifier: Phos-Chek 3% AFFF MilSpec - [AQUAFILM AF-3MS]

1.2 Relevant identified uses of the substance or mixture and uses advised against:

Relevant uses: Fire-extinguishing. For professional use only.

Uses advised against: All uses not specified in this section or in section 7.3

1.3 Details of the supplier of the safety data sheet:

AUXQUIMIA, S.A.U.
Polígono Industrial de Baiña, parcela 23
33682 Baiña (Mieres) - Asturias - Spain
Phone.: +34 985 242 945 / +34 985 242 946 -
Fax: +34 985 253 809
auxquimia@icl-group.com
www.auxquimia.com

1.4 Emergency telephone number: +34 985 242 945 / +34 985 242 946

SECTION 2: HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture:

NFPA 704:

Health Hazards: 3
Flammability Hazards: 0
Instability Hazards: 0
Special Hazards: Non-applicable

Directive 67/548/EC and Directive 1999/45/EC:

This product was classified in accordance with Directive 67/548/EC and Directive 1999/45/EC, adapting the requirements to Regulation (EC) nº1907/2006 (REACH regulation).

Xi: R36 - Irritating to eyes

2.2 Label elements:

NFPA 704:

Directive 67/548/EC and Directive 1999/45/EC:

In accordance with the legislation, the elements on the label are as follows:

R Phrases:

R36: Irritating to eyes

S Phrases:

S25: Avoid contact with eyes

Supplementary information:

Non-applicable

2.3 Other hazards:

Non-applicable

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Chemical description: Aqueous solution of tensoactives

Components:

In accordance with Annex II of Regulation (EC) nº1907/2006 (point 3), the product contains:

- CONTINUED ON NEXT PAGE -

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS (continue)

Identification	Chemical name/Classification		Concentration
CAS: 112-34-5 EC: 203-961-6 Index: 603-096-00-8 REACH: 01-2119475104-44-XXXX	**2-(2-butoxietoxi)etanol**	ATP CLP00	**15 - <20 %**
	Directive 67/548/EC	Xi: R36	
	Regulation 1272/2008	Eye Irrit. 2: H319 - Warning	
CAS: Non-applicable EC: Non-applicable Index: Non-applicable REACH: Non-applicable	**Mixture of fluorosurfactants**	Not classified	**1 - <3 %**
	Directive 67/548/EC		
	Regulation 1272/2008		
CAS: Non-applicable EC: Non-applicable Index: Non-applicable REACH: Non-applicable	**Non-ionic hydrocarbon surfactant 6607700000**	Self-classified	**1 - <3 %**
	Directive 67/548/EC	Xi: R41	
	Regulation 1272/2008	Eye Dam. 1: H318 - Danger	
CAS: Non-applicable EC: Non-applicable Index: Non-applicable REACH: Non-applicable	**Anionic hydrocarbon surfactant 6201310000**	Self-classified	**1 - <3 %**
	Directive 67/548/EC	Xi: R38, R41; Xn: R22	
	Regulation 1272/2008	Acute Tox. 4: H302; Aquatic Chronic 3: H412; Eye Dam. 1: H318; Skin Irrit. 2: H315 - Danger	
CAS: Non-applicable EC: Non-applicable Index: Non-applicable REACH: Non-applicable	**Anionic hydrocarbon surfactant 6608700000**	Self-classified	**1 - <3 %**
	Directive 67/548/EC	Xi: R38, R41	
	Regulation 1272/2008	Eye Dam. 1: H318; Skin Irrit. 2: H315 - Danger	
CAS: Non-applicable EC: Non-applicable Index: Non-applicable REACH: Non-applicable	**Amphoteric hydrocarbon surfactant 6608110000**	Self-classified	**0,1 - <1 %**
	Directive 67/548/EC	Xi: R36, R43	
	Regulation 1272/2008	Eye Irrit. 2: H319; Skin Sens. 1: H317 - Warning	
CAS: Non-applicable EC: Non-applicable Index: Non-applicable REACH: Non-applicable	**Anionic hydrocarbon surfactant 6200710000**	Self-classified	**0,1 - <1 %**
	Directive 67/548/EC	Xi: R36/38	
	Regulation 1272/2008	Eye Irrit. 2: H319; Skin Irrit. 2: H315 - Warning	
CAS: 29385-43-1 EC: 249-596-6 Index: Non-applicable REACH: 01-2119979081-35-XXXX	**Tolyltriazole**	Self-classified	**0,1 - <1 %**
	Directive 67/548/EC	N: R51/53; Xn: R22	
	Regulation 1272/2008	Acute Tox. 4: H302; Aquatic Chronic 2: H411 - Warning	
CAS: 67-56-1 EC: 200-659-6 Index: 603-001-00-X REACH: 01-2119433307-44-XXXX	**Methanol**	ATP CLP00	**<0,1 %**
	Directive 67/548/EC	F: R11; T: R23/24/25, R39/23/24/25	
	Regulation 1272/2008	Acute Tox. 3: H301+H311+H331; Flam. Liq. 2: H225; STOT SE 1: H370 - Danger	
CAS: 111-77-3 EC: 203-906-6 Index: 603-107-00-6 REACH: 01-2119475100-52-XXXX	**2-(2-methoxyethoxy)ethanol**	ATP CLP00	**<0,1 %**
	Directive 67/548/EC	Repr. Cat 3: R63	
	Regulation 1272/2008	Repr. 2: H361d - Warning	

To obtain more information on the risk of the substances consult sections 8, 11, 12 and 16.

SECTION 4: FIRST AID MEASURES

4.1 Description of first aid measures:

The symptoms resulting from intoxication can appear after exposure, therefore, in case of doubt, seek medical attention for direct exposure to the chemical product or persistent discomfort, showing the MSDS of this product.

By inhalation:

This product is not classified as dangerous through inhalation,however, it is recommended in case of intoxication symptoms to remove the person affected from the area of exposure, provide clean air and keep at rest. Request medical attention if symptoms persist.

By skin contact:

This product is not classified as dangerous when in contact with the skin. However, in case of skin contact it is recommended to remove contaminated clothes and shoes, rinse the skin or shower the person affected if necessary thoroughly with cold water and neutral soap. In case of serious reaction consult a doctor.

By eye contact:

Rinse eyes thoroughly with luke warm water for at least 15 minutes. Do not allow the person affected to rub or close their eyes. If the injured person uses contact lenses, these should be removed unless they are stuck to the eyes, as this could cause further damage. In all cases, after cleaning, a doctor should be consulted as quickly as possible with the MSDS of the product.

By consumption:

Do not induce vomiting, but if it does happen keep the head up to avoid inhalation. Keep the person affected at rest. Rinse out the mouth and throat, as they may have been affected during ingestion.

4.2 Most important symptoms and effects, both acute and delayed:

- CONTINUED ON NEXT PAGE -

SECTION 4: FIRST AID MEASURES (continue)

Acute and delayed effects are indicated in sections 2 and 11.

4.3 Indication of any immediate medical attention and special treatment needed:

Non-applicable

SECTION 5: FIREFIGHTING MEASURES

5.1 Extinguishing media:

Product is non-flammable under normal conditions of storage, manipulation and use, containing flammable substances. In the case of inflammation as a result of improper manipulation, storage or use preferably use polyvalent powder extinguishers (ABC powder), in accordance with the Regulation on fire protection systems. IT IS NOT RECOMMENDED to use tap water as an extinguishing agent.

5.2 Special hazards arising from the substance or mixture:

As a result of combustion or thermal decomposition reactive subproducts are created that can become highly toxic and, consequently, can present a serious health risk.

5.3 Advice for firefighters:

Depending on the magnitude of the fire it may be necessary to use full protective clothing and individual respiratory equipment. Minimum emergency facilities and equipment should be available (fire blankets, portable first aid kit,...) in accordance with Directive 89/654/EC.

Additional provisions:

Act in accordance with the Internal Emergency Plan and the Information Sheets on actions to take after an accident or other emergencies. Destroy any source of ignition. In case of fire, refrigerate the storage containers and tanks for products susceptible to inflamation, explosion or BLEVE as a result of high temperatures. Avoid spillage of the products used to extinguish the fire into an aqueous medium.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures:

Isolate leaks provided that there is no additional risk for the people performing this task. Evacuate the area and keep out those without protection. Personal protection equipment must be used against potential contact with the spilt product (See section 8). Above all prevent the formation of any vapour-air flammable mixtures, through either ventilation or the use of an inertizing agent. Destroy any source of ignition. Eliminate electrostatic charges by interconnecting all the conductive surfaces on which static electricity could form, and also ensuring that all surfaces are connected to the ground.

6.2 Environmental precautions:

Avoid spillage into an aqueous medium as it contains substances potentially dangerous for this. Contain the product absorbed in hermetically sealed containers. In the case of serious spillage into an aqueous medium notify the relevant authority.

6.3 Methods and material for containment and cleaning up:

It is recommended:

Absorb the spillage using sand or inert absorbent and move it to a safe place. Do not absorb in sawdust or other combustible absorbents. For any concern related to disposal consult section 13.

6.4 Reference to other sections:

See sections 8 and 13.

SECTION 7: HANDLING AND STORAGE

7.1 Precautions for safe handling:

A.- Precautions for safe manipulation

Comply with the current legislation concerning the prevention of industrial risks. Keep containers hermetically sealed. Control spills and residues, destroying them with safe methods (section 6). Avoid leakages from the container. Maintain order and cleanliness where dangerous products are used.

B.- Technical recommendations for the prevention of fires and explosions

Avoid the evaporation of the product as it contains flammable substances, which could form flammable vapour/air mixtures in the presence of sources of ignition. Control sources of ignition (mobile phones, sparks,...) and transfer at slow speeds to avoid the creation of electrostatic charges. Avoid projections and pulverizations. Consult section 10 for conditions and materials that should be avoided.

- CONTINUED ON NEXT PAGE -

SECTION 7: HANDLING AND STORAGE (continue)

C.- Technical recommendations to prevent ergonomic and toxicological risks

Do not eat or drink during the process, washing hands afterwards with suitable cleaning products.

D.- Technical recommendations to prevent environmental risks

It is recommended to have absorbent material available at close proximity to the product (See subsection 6.3)

7.2 Conditions for safe storage, including any incompatibilities:

A.- Technical measures for storage

Minimum Temp.: 0 ºC

Maximun Temp.: 50 ºC

B.- General conditions for storage

Avoid sources of heat, radiation, static electricity and contact with food. For additional information see subsection 10.5

7.3 Specific end use(s):

Except for the instructions already specified it is not necessary to provide any special recommendation regarding the uses of this product.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters:

Substances whose occupational exposure limits have to be monitored in the work environment

Identification	Environmental limits		
Methanol	TLV-TWA	200 ppm	
CAS: 67-56-1	TLV-STEL	250 ppm	
EC: 200-659-6	Year	2014	

DNEL (Workers):

Identification		Short exposure		Long exposure	
		Systemic	Local	Systemic	Local
2-(2-butoxietoxi)etanol	Oral	Non-applicable	Non-applicable	Non-applicable	Non-applicable
CAS: 112-34-5	Dermal	Non-applicable	Non-applicable	20 mg/kg	Non-applicable
EC: 203-961-6	Inhalation	Non-applicable	101,2 mg/m³	67,5 mg/m³	67,5 mg/m³
Non-ionic hydrocarbon surfactant 6607700000	Oral	Non-applicable	Non-applicable	Non-applicable	Non-applicable
CAS: Non-applicable	Dermal	Non-applicable	Non-applicable	595000 mg/kg	Non-applicable
EC: Non-applicable	Inhalation	Non-applicable	Non-applicable	420 mg/m³	Non-applicable
Anionic hydrocarbon surfactant 6201310000	Oral	Non-applicable	Non-applicable	Non-applicable	Non-applicable
CAS: Non-applicable	Dermal	Non-applicable	Non-applicable	4060 mg/kg	Non-applicable
EC: Non-applicable	Inhalation	Non-applicable	Non-applicable	285 mg/m³	Non-applicable
Anionic hydrocarbon surfactant 6608700000	Oral	Non-applicable	Non-applicable	Non-applicable	Non-applicable
CAS: Non-applicable	Dermal	Non-applicable	Non-applicable	4060 mg/kg	Non-applicable
EC: Non-applicable	Inhalation	Non-applicable	Non-applicable	285 mg/m³	Non-applicable
Tolyltriazole	Oral	Non-applicable	Non-applicable	Non-applicable	Non-applicable
CAS: 29385-43-1	Dermal	Non-applicable	Non-applicable	0,5 mg/kg	Non-applicable
EC: 249-596-6	Inhalation	Non-applicable	Non-applicable	8,8 mg/m³	Non-applicable
Methanol	Oral	Non-applicable	Non-applicable	Non-applicable	Non-applicable
CAS: 67-56-1	Dermal	40 mg/kg	Non-applicable	40 mg/kg	Non-applicable
EC: 200-659-6	Inhalation	260 mg/m³	260 mg/m³	260 mg/m³	260 mg/m³
2-(2-methoxyethoxy)ethanol	Oral	Non-applicable	Non-applicable	Non-applicable	Non-applicable
CAS: 111-77-3	Dermal	Non-applicable	Non-applicable	0,53 mg/kg	Non-applicable
EC: 203-906-6	Inhalation	Non-applicable	Non-applicable	50,1 mg/m³	Non-applicable

DNEL (Population):

- CONTINUED ON NEXT PAGE -

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION (continue)

Identification		Short exposure		Long exposure	
		Systemic	Local	Systemic	Local
2-(2-butoxietoxi)etanol	Oral	Non-applicable	Non-applicable	1,25 mg/kg	Non-applicable
CAS: 112-34-5	Dermal	Non-applicable	Non-applicable	10 mg/kg	Non-applicable
EC: 203-961-6	Inhalation	Non-applicable	50,6 mg/m³	34 mg/m³	34 mg/m³
Non-ionic hydrocarbon surfactant 6607700000	Oral	Non-applicable	Non-applicable	35,7 mg/kg	Non-applicable
CAS: Non-applicable	Dermal	Non-applicable	Non-applicable	357000 mg/kg	Non-applicable
EC: Non-applicable	Inhalation	Non-applicable	Non-applicable	124 mg/m³	Non-applicable
Anionic hydrocarbon surfactant 6201310000	Oral	Non-applicable	Non-applicable	24 mg/kg	Non-applicable
CAS: Non-applicable	Dermal	Non-applicable	Non-applicable	2440 mg/kg	Non-applicable
EC: Non-applicable	Inhalation	Non-applicable	Non-applicable	85 mg/m³	Non-applicable
Anionic hydrocarbon surfactant 6608700000	Oral	Non-applicable	Non-applicable	24 mg/kg	Non-applicable
CAS: Non-applicable	Dermal	Non-applicable	Non-applicable	2440 mg/kg	Non-applicable
EC: Non-applicable	Inhalation	Non-applicable	Non-applicable	85 mg/m³	Non-applicable
Tolyltriazole	Oral	0,25 mg/kg	Non-applicable	0,25 mg/kg	Non-applicable
CAS: 29385-43-1	Dermal	Non-applicable	Non-applicable	0,25 mg/kg	Non-applicable
EC: 249-596-6	Inhalation	Non-applicable	Non-applicable	4,4 mg/m³	Non-applicable
Methanol	Oral	8 mg/kg	Non-applicable	8 mg/kg	Non-applicable
CAS: 67-56-1	Dermal	8 mg/kg	Non-applicable	8 mg/kg	Non-applicable
EC: 200-659-6	Inhalation	50 mg/m³	50 mg/m³	50 mg/m³	50 mg/m³
2-(2-methoxyethoxy)ethanol	Oral	Non-applicable	Non-applicable	1,5 mg/kg	Non-applicable
CAS: 111-77-3	Dermal	Non-applicable	Non-applicable	0,27 mg/kg	Non-applicable
EC: 203-906-6	Inhalation	Non-applicable	Non-applicable	25 mg/m³	Non-applicable

PNEC:

Identification				
2-(2-butoxietoxi)etanol	STP	200 mg/L	Fresh water	1 mg/L
CAS: 112-34-5	Soil	0,4 mg/kg	Marine water	0,1 mg/L
EC: 203-961-6	Intermittent	3,9 mg/L	Sediment (Fresh water)	4 mg/kg
	Oral	56 g/kg	Sediment (Marine water)	0,4 mg/kg
Non-ionic hydrocarbon surfactant 6607700000	STP	560 mg/L	Fresh water	0,176 mg/L
CAS: Non-applicable	Soil	0,654 mg/kg	Marine water	0,0176 mg/L
EC: Non-applicable	Intermittent	0,27 mg/L	Sediment (Fresh water)	1,516 mg/kg
	Oral	111,11 g/kg	Sediment (Marine water)	0,152 mg/kg
Anionic hydrocarbon surfactant 6201310000	STP	1,35 mg/L	Fresh water	0,095 mg/L
CAS: Non-applicable	Soil	0,2445 mg/kg	Marine water	0,0095 mg/L
EC: Non-applicable	Intermittent	0,086 mg/L	Sediment (Fresh water)	1,5 mg/kg
	Oral	Non-applicable	Sediment (Marine water)	0,15 mg/kg
Anionic hydrocarbon surfactant 6608700000	STP	1,35 mg/L	Fresh water	0,1357 mg/L
CAS: Non-applicable	Soil	0,22 mg/kg	Marine water	0,01357 mg/L
EC: Non-applicable	Intermittent	Non-applicable	Sediment (Fresh water)	1,5 mg/kg
	Oral	Non-applicable	Sediment (Marine water)	0,15 mg/kg
Tolyltriazole	STP	39,4 mg/L	Fresh water	0,008 mg/L
CAS: 29385-43-1	Soil	0,0024 mg/kg	Marine water	0,008 mg/L
EC: 249-596-6	Intermittent	0,086 mg/L	Sediment (Fresh water)	0,0025 mg/kg
	Oral	Non-applicable	Sediment (Marine water)	0,0025 mg/kg
Methanol	STP	100 mg/L	Fresh water	154 mg/L
CAS: 67-56-1	Soil	23,5 mg/kg	Marine water	15,4 mg/L
EC: 200-659-6	Intermittent	1540 mg/L	Sediment (Fresh water)	570,4 mg/kg
	Oral	Non-applicable	Sediment (Marine water)	Non-applicable
2-(2-methoxyethoxy)ethanol	STP	10000 mg/L	Fresh water	12 mg/L
CAS: 111-77-3	Soil	2,44 mg/kg	Marine water	1,2 mg/L
EC: 203-906-6	Intermittent	12 mg/L	Sediment (Fresh water)	44,4 mg/kg
	Oral	90 g/kg	Sediment (Marine water)	0,44 mg/kg

8.2 Exposure controls:

- CONTINUED ON NEXT PAGE -

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION (continue)

A.- General security and hygiene measures in the work place

If product is used at the concentration dosing conditions specified in the relevant instructions for use (section 15), personal protective equipment described in section 8.2 for UNDILUTED products will not be required.

Safe handling recommendations for undiluted product:
As a preventative measure it is recommended to use basic Personal Protection Equipment, with the corresponding ""CE marking"" in accordance with Directive 89/686/EC. For more information on Personal Protection Equipment (storage, use, cleaning, maintenance, class of protection,...) consult the information leaflet provided by the manufacturer. For more infomation see subsection 7.1.
All information contained herein is a recommendation which needs some specification from the labour risk prevention services as it is not known whether the company has additional measures at its disposal.

B.- Respiratory protection

The use of protection equipment will be necessary if a mist forms or if the professional exposure limits are exceeded.

C.- Specific protection for the hands

Pictogram	PPE	Labelling	CEN Standard	Remarks
 Mandatory hand protection	Chemical protective gloves	CE CAT I	EN 374-1:2003 EN 374-3:2003/AC:2006 EN 420:2003+A1:2009	Replace the gloves at any sign of deterioration.

D.- Ocular and facial protection

Pictogram	PPE	Labelling	CEN Standard	Remarks
 Mandatory face protection	Panoramic glasses against liquid splash	CE CAT II	EN 166:2001 EN 172:1994/A1:2000 EN 172:1994/A2:2001 EN ISO 4007:2012	Clean daily and disinfect periodically according to the manufacturer´s instructions. Use if there is a risk of splashing.

E.- Bodily protection

Pictogram	PPE	Labelling	CEN Standard	Remarks
	Work clothing	CE CAT I	EN ISO 13688:2013	For professional use only.
	Anti-slip work shoes	CE CAT II	EN ISO 20347:2012 EN ISO 20344:2011	None

F.- Additional emergency measures

Emergency measure	Standards	Emergency measure	Standards
 Emergency shower	ANSI Z358-1 ISO 3864-1:2002	 Eyewash stations	DIN 12 899 ISO 3864-1:2002

Environmental exposure controls:

In accordance with the community legislation for the protection of the environment it is recommended to avoid environmental spillage of both the product and its container. For additional information see subsection 7.1.D

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties:

For complete information see the product datasheet.

Appearance:

Physical state at 20 ºC: Liquid

*Not relevant due to the nature of the product, not providing information property of its hazards.

- CONTINUED ON NEXT PAGE -

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES (continue)

Appearance:	Transparent
Color:	Yellowish
Odor:	Characteristic

Volatility:

Boiling point at atmospheric pressure:	Non-applicable *
Vapour pressure at 20 ºC:	Non-applicable *
Vapour pressure at 50 ºC:	Non-applicable *
Evaporation rate at 20 ºC:	Non-applicable *

Product description:

Density at 20 ºC:	1000 - 1040 kg/m³
Relative density at 20 ºC:	Non-applicable *
Dynamic viscosity at 20 ºC:	4 cP
Kinematic viscosity at 20 ºC:	Non-applicable *
Kinematic viscosity at 40 ºC:	Non-applicable *
Concentration:	Non-applicable *
pH:	7 - 8,5
Vapour density at 20 ºC:	Non-applicable *
Partition coefficient n-octanol/water 20 ºC:	Non-applicable *
Solubility in water at 20 ºC:	Non-applicable *
Solubility property:	Highly water-soluble
Decomposition temperature:	Non-applicable *
Melting point/freezing point:	Non-applicable *

Flammability:

Flash Point:	Non Flammable (>60 ºC)
Autoignition temperature:	Non-applicable *
Lower flammability limit:	Non-applicable *
Upper flammability limit:	Non-applicable *

9.2 Other information:

Surface tension at 20 ºC:	Non-applicable *
Refraction index:	1,367

*Not relevant due to the nature of the product, not providing information property of its hazards.

SECTION 10: STABILITY AND REACTIVITY

10.1 Reactivity:

No hazardous reactions are expected if the following technical instructions storage of chemicals. See section 7.

10.2 Chemical stability:

Chemically stable under the conditions of storage, handling and use.

10.3 Possibility of hazardous reactions:

Under the specified conditions, hazardous reactions that lead to excessive temperatures or pressure are not expected.

10.4 Conditions to avoid:

Applicable for handling and storage at room temperature:

Shock and friction	Contact with air	Increase in temperature	Sunlight	Humidity
Not applicable	Not applicable	Precaution	Avoid direct impact	Not applicable

10.5 Incompatible materials:

Acids	Water	Combustive materials	Combustible materials	Others
Not applicable	Not applicable	Avoid direct impact	Avoid direct impact	Not applicable

- CONTINUED ON NEXT PAGE -

SECTION 10: STABILITY AND REACTIVITY (continue)

10.6 Hazardous decomposition products:

See subsection 10.3, 10.4 and 10.5 to find out the specific decomposition products. Depending on the decomposition conditions, complex mixtures of chemical substances can be released: carbon dioxide (CO2), carbon monoxide and other organic compounds.

SECTION 11: TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects:

No experimental information is available on the product itself in relation to the toxicological properties. When performing the danger classification on corrosive or irritant effects the recommendations included in section 3.2.5 of Annex VI of Directive 67/548/EC, in paragraphs b) and c) of section 3 of article 6 of Directive 1999/45/EC and in section 3.2.3.3.5. of Annex I of CLP Regulation were taken into account.

Contains glycols. With possibility of effects that are hazardous to the health, it is recommended not to breathe the vapours for long periods of time.

Dangerous health implications:

In case of exposure that is repetitive, prolonged or at concentrations higher than recommended by the occupational exposure limits, it may result in adverse effects on health depending on the means of exposure:

A.- Ingestion:

Based on available data, the classification criteria are not met, however, it contains substances classified as dangerous for consumption. For more information see section 3.

B- Inhalation:

Based on available data, the classification criteria are not met, however, it contains substances classified as dangerous for inhalation. For more information see section 3.

C- Contact with the skin and the eyes:

Produces eye damage after contact.

D- CMR effects (carcinogenicity, mutagenicity and toxicity to reproduction):

Based on available data, the classification criteria are not met, however it does contain substances classified as dangerous for this effect. For more information see section 3.

E- Sensitizing effects:

Based on available data, the classification criteria are not met, however, it contains substances classified as dangerous with sensibilizing effects. For more information see section 3.

F- Specific target organ toxicity (STOT)-time exposure:

Based on available data, the classification criteria are not met, as it does not contain substances classified as dangerous for this effect. For more information see section 3.

G- Specific target organ toxicity (STOT)-repeated exposure:

Based on available data, the classification criteria are not met, as it does not contain substances classified as dangerous for this effect. For more information see section 3.

H- Aspiration hazard:

Based on available data, the classification criteria are not met, as it does not contain substances classified as dangerous for this effect. For more information see section 3.

Other information:

Non-applicable

Specific toxicology information on the substances:

Identification	Acute toxicity		Genus
Anionic hydrocarbon surfactant 6201310000	LD50 oral	580 mg/kg	Rat
CAS: Non-applicable	LD50 dermal	Non-applicable	
EC: Non-applicable	LC50 inhalation	Non-applicable	
Methanol	LD50 oral	100 mg/kg	Rat
CAS: 67-56-1	LD50 dermal	300 mg/kg	Rabbit
EC: 200-659-6	LC50 inhalation	3 mg/L (4 h)	Rat
2-(2-methoxyethoxy)ethanol	LD50 oral	7128 mg/kg	Rat
CAS: 111-77-3	LD50 dermal	9404 mg/kg	Rabbit
EC: 203-906-6	LC50 inhalation	Non-applicable	

- CONTINUED ON NEXT PAGE -

SECTION 12: ECOLOGICAL INFORMATION

The experimental information related to the ecotoxicological properties of the product itself is not available

12.1 Toxicity:

Identification	Acute toxicity		Specie	Genus
2-(2-butoxietoxi)etanol	LC50	1300 mg/L (96 h)	Lepomis macrochirus	Fish
CAS: 112-34-5	EC50	2850 mg/L (24 h)	Daphnia magna	Crustacean
EC: 203-961-6	EC50	53 mg/L (192 h)	Microcystis aeruginosa	Alga
Non-ionic hydrocarbon surfactant 6607700000	LC50	126 mg/L (96 h)	Brachydanio rerio	Fish
CAS: Non-applicable	EC50	151 mg/L (48 h)	Acartia tonsa	Crustacean
EC: Non-applicable	EC50	27 mg/L (72 h)	Scenedesmus subspicatus	Alga
Anionic hydrocarbon surfactant 6201310000	LC50	177 mg/L (96 h)	Brachydanio rerio	Fish
CAS: Non-applicable	EC50	Non-applicable		
EC: Non-applicable	EC50	21,5 mg/L (72 h)	Pseudokirchneriella subcapitata	Alga
Tolyltriazole	LC50	55 mg/L (96 h)	Cypronodon variegatus	Fish
CAS: 29385-43-1	EC50	9 mg/L (48 h)	Daphnia galeata	Crustacean
EC: 249-596-6	EC50	75 mg/L (72 h)	Pseudokirchneriella subcapitata	Alga
Methanol	LC50	15400 mg/L (96 h)	Lepomis macrochirus	Fish
CAS: 67-56-1	EC50	12000 mg/L (96 h)	Nitrocra spinipes	Crustacean
EC: 200-659-6	EC50	530 mg/L (168 h)	Microcystis aeruginosa	Alga
2-(2-methoxyethoxy)ethanol	LC50	5741 mg/L (96 h)	Pimephales promelas	Fish
CAS: 111-77-3	EC50	1192 mg/L (48 h)	Daphnia magna	Crustacean
EC: 203-906-6	EC50	Non-applicable		

12.2 Persistence and degradability:

Identification	Degradability		Biodegradability	
2-(2-butoxietoxi)etanol	BOD5	0.25 g O2/g	Concentration	100 mg/L
CAS: 112-34-5	COD	2.08 g O2/g	Period	28 days
EC: 203-961-6	BOD5/COD	0.12	% Biodegradable	92 %
Non-ionic hydrocarbon surfactant 6607700000	BOD5	Non-applicable	Concentration	Non-applicable
CAS: Non-applicable	COD	Non-applicable	Period	28 days
EC: Non-applicable	BOD5/COD	Non-applicable	% Biodegradable	100 %
Anionic hydrocarbon surfactant 6201310000	BOD5	Non-applicable	Concentration	2 mg/L
CAS: Non-applicable	COD	Non-applicable	Period	30 days
EC: Non-applicable	BOD5/COD	Non-applicable	% Biodegradable	98 %
Tolyltriazole	BOD5	Non-applicable	Concentration	100 mg/L
CAS: 29385-43-1	COD	Non-applicable	Period	28 days
EC: 249-596-6	BOD5/COD	Non-applicable	% Biodegradable	4 %
Methanol	BOD5	Non-applicable	Concentration	100 mg/L
CAS: 67-56-1	COD	1.42 g O2/g	Period	14 days
EC: 200-659-6	BOD5/COD	Non-applicable	% Biodegradable	92 %
2-(2-methoxyethoxy)ethanol	BOD5	Non-applicable	Concentration	Non-applicable
CAS: 111-77-3	COD	Non-applicable	Period	28 days
EC: 203-906-6	BOD5/COD	0.07	% Biodegradable	100 %

12.3 Bioaccumulative potential:

Identification	Bioaccumulation potential	
2-(2-butoxietoxi)etanol	BCF	0,46
CAS: 112-34-5	Pow Log	0,56
EC: 203-961-6	Potential	Low
Methanol	BCF	3
CAS: 67-56-1	Pow Log	-0,77
EC: 200-659-6	Potential	Low
2-(2-methoxyethoxy)ethanol	BCF	3
CAS: 111-77-3	Pow Log	-1,18
EC: 203-906-6	Potential	Low

12.4 Mobility in soil:

- CONTINUED ON NEXT PAGE -

SECTION 12: ECOLOGICAL INFORMATION (continue)

Identification	Absorption/desorption		Volatility	
2-(2-butoxietoxi)etanol	Koc	48	Henry	7,2E-9 Pa·m³/mol
CAS: 112-34-5	Conclusion	Very High	Dry soil	No
EC: 203-961-6	Surface tension	33950 N/m (25 ºC)	Moist soil	No
Non-ionic hydrocarbon surfactant 6607700000	Koc	50	Henry	1,2E-8 Pa·m³/mol
CAS: Non-applicable	Conclusion	Very High	Dry soil	No
EC: Non-applicable	Surface tension	Non-applicable	Moist soil	No
Anionic hydrocarbon surfactant 6201310000	Koc	150	Henry	1,06E-2 Pa·m³/mol
CAS: Non-applicable	Conclusion	Very High	Dry soil	Non-applicable
EC: Non-applicable	Surface tension	33200 N/m (24 ºC)	Moist soil	Non-applicable
Tolyltriazole	Koc	90	Henry	Non-applicable
CAS: 29385-43-1	Conclusion	Very High	Dry soil	Non-applicable
EC: 249-596-6	Surface tension	Non-applicable	Moist soil	Non-applicable
Methanol	Koc	Non-applicable	Henry	Non-applicable
CAS: 67-56-1	Conclusion	Non-applicable	Dry soil	Non-applicable
EC: 200-659-6	Surface tension	23550 N/m (25 ºC)	Moist soil	Non-applicable
2-(2-methoxyethoxy)ethanol	Koc	1	Henry	1,621E-6 Pa·m³/mol
CAS: 111-77-3	Conclusion	Very High	Dry soil	Non-applicable
EC: 203-906-6	Surface tension	35900 N/m (25 ºC)	Moist soil	No

12.5 Results of PBT and vPvB assessment:

Non-applicable

12.6 Other adverse effects:

Not described

SECTION 13: DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods:

Code	Description	Waste class (Directive 2008/98/EC)
16 05 08*	Discarded organic chemicals consisting of or containing dangerous substances	Dangerous

Waste management (disposal and evaluation):

Consult the authorized waste service manager on the assessment and disposal operations in accordance with Annex 1 and Annex 2 (Directive 2008/98/EC). As under 15 01 (2000/532/EC) of the code and in case the container has been in direct contact with the product, it will be processed the same way as the actual product. Otherwise, it will be processed as non-dangerous residue. We do not recommended disposal down the drain. See paragraph 6.2.

Regulations related to waste management:

In accordance with Annex II of Regulation (EC) nº1907/2006 (REACH) the community or state provisions related to waste management are stated

Community legislation: Directive 2008/98/EC, 2000/532/EC: Commission Decision of 3 May 2000

SECTION 14: TRANSPORT INFORMATION

This product is not regulated for transport (ADR/RID,IMDG,IATA)

SECTION 15: REGULATORY INFORMATION

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture:

Candidate substances for authorisation under the Regulation (EC) 1907/2006 (REACH): Non-applicable

Regulation (EC) 1005/2009, about substances that deplete the ozone layer: Non-applicable

Active substances for which a decision of non-inclusion onto Annex I (Regulation (EU) No 528/2012): Non-applicable

Regulation (EC) 649/2012, in relation to the import and export of hazardous chemical products: Non-applicable

Limitations to commercialisation and the use of certain dangerous substances and mixtures (Annex XVII, REACH):

- CONTINUED ON NEXT PAGE -

SECTION 15: REGULATORY INFORMATION (continue)

Non-applicable

Specific provisions in terms of protecting people or the environment:

It is recommended to use the information included in this safety data sheet as data used in a risk evaluation of the local circumstances in order to establish the necessary risk prevention measures for the manipulation, use, storage and disposal of this product.

Relevant instructions for use:

This product is intended for the production of foam for fire extinguishing purposes. It should be diluted at 3% in water and used with appropriate foam-generating equipment.

Other legislation:

Non-applicable

15.2 Chemical safety assessment:

The supplier has not carried out evaluation of chemical safety.

SECTION 16: OTHER INFORMATION

Legislation related to safety data sheets:

This safety data sheet has been designed in accordance with ANNEX II-Guide to the compilation of safety data sheets of Regulation (EC) Nº 1907/2006 (Regulation (EC) Nº 453/2010)

Modifications related to the previous security card which concerns the ways of managing risks. :

Non-applicable

Text of R-phrases considered in section 3:

The phrases indicated do not refer to the product itself; they are present merely for informative purposes and refer to the individual components which appear in section 3

Directive 67/548/EC and Directive 1999/45/EC:

R11: Highly flammable
R22: Harmful if swallowed
R23/24/25: Toxic by inhalation, in contact with skin and if swallowed
R36: Irritating to eyes
R36/38: Irritating to eyes and skin
R38: Irritating to skin
R39/23/24/25: Toxic: danger of very serious irreversible effects through inhalation, in contact with skin and if swallowed
R41: Risk of serious damage to eyes
R43: May cause sensitisation by skin contact
R51/53: Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment
R63: Possible risk of harm to the unborn child

CLP Regulation (EC) nº 1272/2008:

Acute Tox. 3: H301+H311+H331 - Toxic if swallowed, in contact with skin or if inhaled
Acute Tox. 4: H302 - Harmful if swallowed
Aquatic Chronic 2: H411 - Toxic to aquatic life with long lasting effects
Aquatic Chronic 3: H412 - Harmful to aquatic life with long lasting effects
Eye Dam. 1: H318 - Causes serious eye damage
Eye Irrit. 2: H319 - Causes serious eye irritation
Flam. Liq. 2: H225 - Highly flammable liquid and vapour
Repr. 2: H361d - Suspected of damaging the unborn child.
Skin Irrit. 2: H315 - Causes skin irritation
Skin Sens. 1: H317 - May cause an allergic skin reaction
STOT SE 1: H370 - Causes damage to organs

Advice related to training:

Minimal training is recommended to prevent industrial risks for staff using this product, in order to facilitate their comprehension and interpretation of this safety data sheet, as well as the label on the product.

Principal bibliographical sources:

http://esis.jrc.ec.europa.eu
http://echa.europa.eu
http://eur-lex.europa.eu

Abbreviations and acronyms:

- CONTINUED ON NEXT PAGE -

SECTION 16: OTHER INFORMATION (continue)

- ADR: European agreement concerning the international carriage of dangerous goods by road
-IMDG: International maritime dangerous goods code
-IATA: International Air Transport Association
-ICAO: International Civil Aviation Organisation
-COD: Chemical Oxygen Demand
-BOD5: 5-day biochemical oxygen demand
-BCF: Bioconcentration factor
-LD50: Lethal Dose 50
-CL50: Lethal Concentration 50
-EC50: Effective concentration 50
-Log-POW: Octanol–water partition coefficient
-Koc: Partition coefficient of organic carbon

- END OF SAFETY DATA SHEET -