

SOLBERG

The new standard in firefighting foam technology — worldwide

Development of Fire fighting foam from 2000

CTIF meeting Frankfurt
10/11 sept 2014
By: Joop Rijnbout

Organisation



Norway
USA
Australian



Till 2001

- *Most used fire fighting foams:*

- AFFF and AFFF/ATC (AFFF/AR)

- Film forming foam concentrates were based on **PFOS** and **PFOA**
 - Amount PFOS substantial higher than PFOA.
 - 3M stops production of Fluor chemicals (May 2000).
 - Many foam concentrates contain fluor surfactants from 3M

From **2001:**

Fluor surfactants can still contain **PFOA** or biodegrade to it.

2006

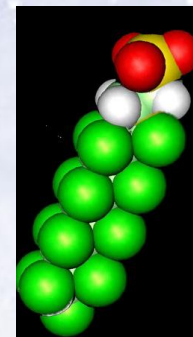
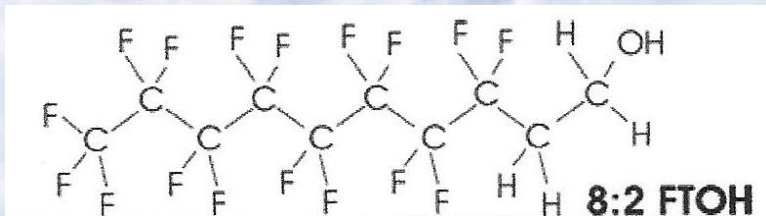


- PFOA : more reservations to this molecule.
- In **2006** : covenant between tussen *EPA* and the 8 biggest producers of fluorchemicals.
Result: Stewardship Program 2010/2015.
 - 2010 reduction of PFOA with 95% with respect to 2000
 - 2015 reduction PFOA to 100%
- Only option to go away from ***C-8 technology.***
- To change to ***C-6 technology.***

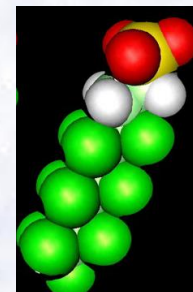
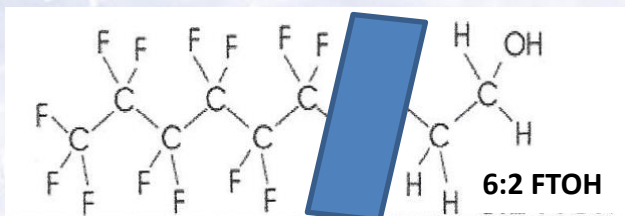
C8-----C6 Technology

AFFF en AFFF/ATC

- C8 -technology: 17 fluoratoms (C8:2 FTS)



- C6 –technology: 13 fluoratoms (C6:2FTS)



25 % less fluor



worse performance

**More F-surfactants for same performance
(products more expensive)**



New approvals

Why Fluor free fire fighting foams?

- **More and more scientists have the suspicion that Fluor-chemicals and other Organohalogens(CL,BR en I) have a negative influence on the environment.**

Perfluorocarbons

- **PFC are persistent and found in the ice bear**



Food chain



- **Not bio-degradable**
- **Toxic profile**

Situation Germany

- **Important players**
 - Governments of the 15 states
 - UBA
 - VDS
 - Watertreatment companies

UBA recommendations

If there is a suitable replacement for an AFFF or AFFF/ATC we recommend to use such one.

Collect the effluent in case an AFFF, AFFF/ATC were used.

Don't use AFFF and AFFF/ATC for trainings purposes.

Many water treatment companies don't accept waste water which contains fluor-chemicals.

For more info, see website:

www.umweltbundesamt.de/producte/pfc/

Ausblick Expectations

PFT steht unter Beobachtung und es kommt zu einem PFT Verbot

PFT (Perfluorierte Tenside)		
PFOS (PerFluorOctylSulfonat)	PFOA (PerFluorOctanoicAcid)	...

Es kommt zu einem generellen Verbot der Anwendung von PFT
They expect a general ban of the use of PFC.

Kunden müssen auf (nahezu) PFT freie Schäume umsteigen

Nicht möglich, da bisher noch keine gleichwertigen Alternativen für
AFFF-Schäume zur Verfügung stehen
Betroffen sind die Feuerwehren sowie die Betreiber von Feuerlöschanlagen

Fire Krefeld

September 2012



Datum: 25.09.2012

Seite 1 von 1

Bezirksregierung Köln



Bezirksregierung Köln, 50608 Köln

An die
Feuer- und Rettungsdienststellen
im Regierungsbezirk Köln

- per email -

Datum: 25.09.2012
Seite 1 von 1

Aktenzeichen:
22_RB22_GroßbrandKrefeld

Auskunft erteilt:
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U-Bahn 3,4,5,18,18
bis Appellhofplatz

Besuchereingang (Hauptferie):
Zeughausstr. 8

Telefonische Sprechzeiten:
mo. - do.: 8:30 - 16:00 Uhr

Besuchertag:
donnerstags: 8:30 - 18:00 Uhr
(weitere Termine nach
Vereinbarung)

Landratskasse Düsseldorf:
Helios
BLZ 300 800 00,
Kontonummer 985 00
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poststelle@brik.nrw.de
www.bezreg-koeln.nrw.de

Überörtliche Hilfe zur Unterstützung beim Großbrand in Krefeld

Sehr geehrte Damen und Herren,

Im Rahmen der überörtlichen Hilfe gem. § 25 FSHG, fordert die Stadt Krefeld landesweite Unterstützung, insbesondere in Form von Schaumlöschmitteln, an.

Ich fordere Sie auf, jegliche Anforderung die an Sie oder an eine Werkfeuerwehr Ihres Zuständigkeitsbereiches gestellt wird, per Sofortmeldung an den Meldekopf der Bezirksregierung Köln zu senden.

Sofern sich eine Werkfeuerwehr in Ihrem Zuständigkeitsbereich befindet, leiten Sie bitte diese Rundverfügung weiter.

Ich erlaube mir den Hinweis, dass keine PFT haltigen Schaummittel in den Einsatz gebracht werden dürfen.

Im Auftrag
gez. Sandra Tünker-Nolhofer
(Rufbereitschaft 22)

Sehr geehrte Damen und Herren,

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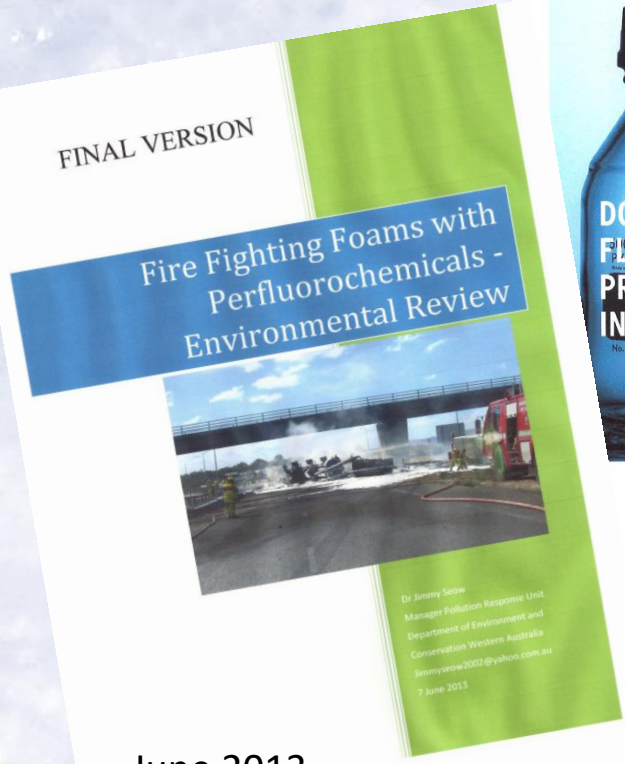
We claim your foam concentrate



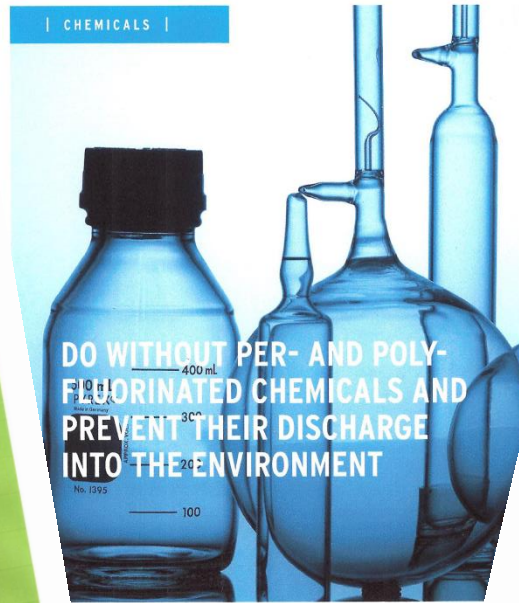
Ich erlaube mir den Hinweis, dass keine PFT haltigen Schaummittel in den Einsatz gebracht werden dürfen.

No PFC containing foam will be allowed to use.....

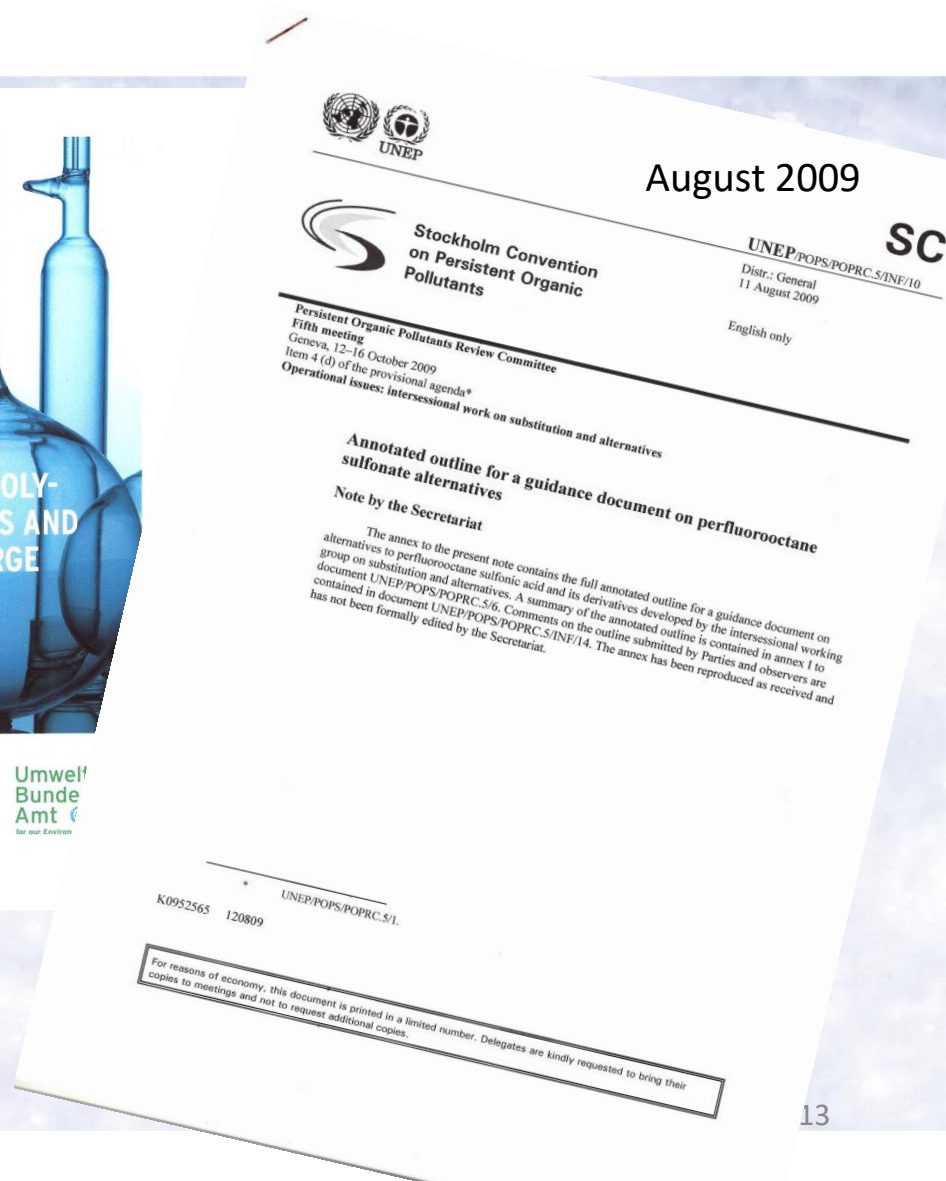
Publications



June 2013



July 2009



K09S256S 120809

UNEP/POPS/POPRC.S/1.

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Fluor free fire fighting foams

- From **2004** available (Australia)

Contain no: Fluor-telomers (short chains)
 Fluor-polymers (long chains) *(sometimes present!)*

Organo-halogen free: best definition to be sure that a recommended product contains no Fluor at all.

Changes in documents

- **SDS**
 - Reach (2008)
 - Reach (2015). More info about raw materials
- **Approvals**
 - EN 2008 (main changes: Material of fire pan. Part 4 IPA and Aceton)
 - ICAO published a higher level (ICAO-C)

Fire fighting foam information

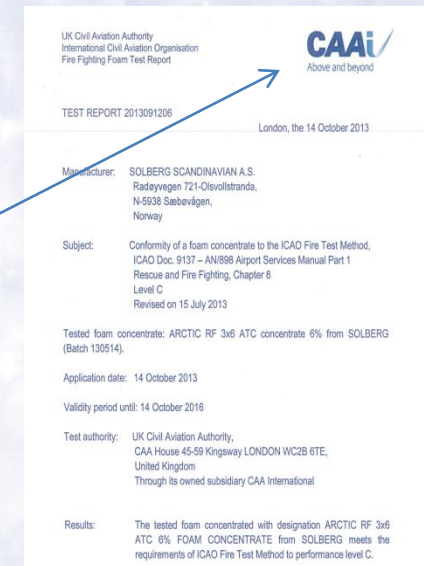
Not all Fluoro free foams have all below mentioned info available.!!

- Product information sheet
- Safety data sheets (REACH)
- Environmental information- Hygiene Instituut
- Approvals:



- EN 1568
- ICAO (Aviation)
- IMO (Marine)
- UL
- Lastfire (refineries)

Airport test organisation



- Tests + reports
- Technical information
- References

Often small



RF-Foam

FLUORFREE



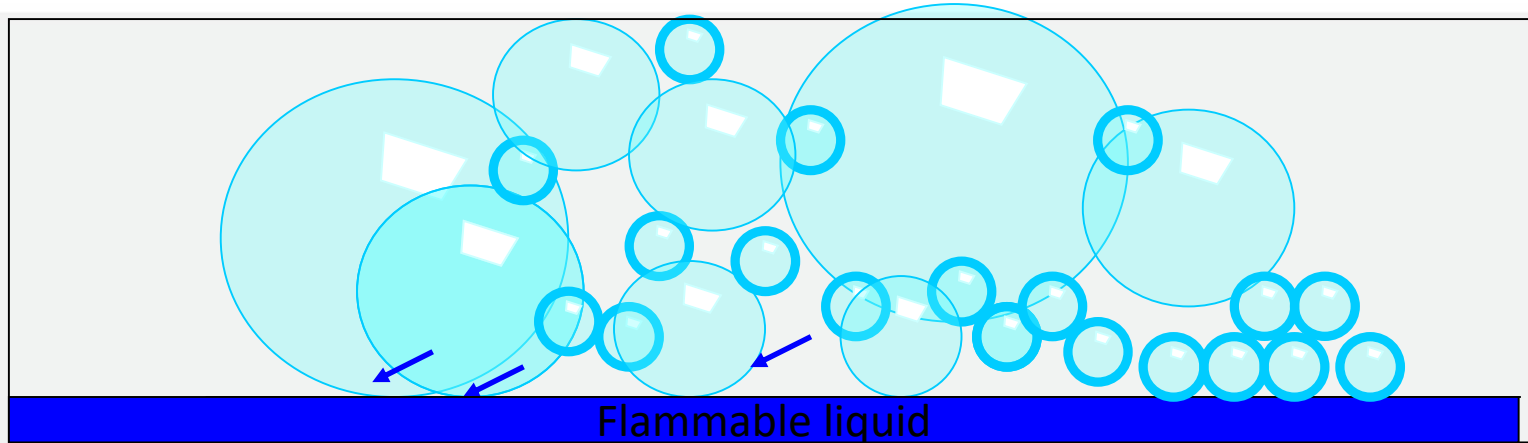
RE-HEALING FOAM™
by SOLBERG

Characteristics of Re-Healing Foams

- Pseudoplastic
- Extinguish properties similar to AFFF and AFFF/ATC
- To use with fresh, sea and brackish water
- Powder compatible
- Good sticking properties
- Usable with all wellknown equipment and proportioner systems systems



Working RF (RE-HEALING) foam



- Easy to expand
- Foam bubbles of different sizes
- **Bigger bubbles** collapse to water film with very short life time but will spread the smaller one's fast over the surface.
- **Smaller bubbles** have stronger walls and long draintime resulting in a very good burnback resistance.

Equipment

- No expanded equipment
- Low expanded equipment
- Medium expanded equipment
- High expanded equipment
- CAFS
- Sprinklers



RE-HEALING Concentrates

Available Concentrates:

- Hydrocarbons : 1%, 3% & 6%
- Idem + Polair solvents : 3% x 6%
- Class A + Biofuels : 3%

Approvals

- EN 1568 part 3 and 4
- ICAO- B (3% and 6%)
- ICAO- C , on our 3 x 6
- UL
- Lastfire



References Airport

- **Dubai**
- **Copenhagen**
- **Bristol**
- **Koln/Bonn**
- **Stuttgart**
- **Bilund**
- **Guernsey**
- **24 airports Australia: Melbourne, Sidney, Canberra, Adelaide etc**
- **Over 20 helidecks in Europe**



SOLBERG

The new standard in firefighting foam technology — worldwide



Solberg is a global company that is a one-stop resource for firefighting foam concentrates and custom-designed foam suppression systems hardware, offering both traditional and innovative firefighting foam technology. www.solbergfoam.com



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Test pans



Big scale tests

