

# Solberg Asia Pacific Pty Ltd

## Product Environmental Data Information



### SOLBERG RE-HEALING FOAM™ RF 3x6 ATC™ FOAM CONCENTRATE (3% on Hydrocarbon Fuels and 6% on Polar Solvents)

**CHEMICAL FAMILY:** Fire control agent (alcohol resistant)

**APPEARANCE:** Water miscible, light to dark amber coloured liquid

**COMPOSITION:**

Water	<70 Wt.%
Emulsifiers	<20 Wt.%
Diethylene Glycol Butyl Ether	<10 Wt.%
Thickeners	< 5 Wt.%
Surfactants	<10 Wt.%

**USAGE:**

Foams containing RF3x6 ATC™ cover, and thus extinguish, hydrocarbon liquid-based fires. For more detailed usage information, see your technical service representative.

**BIODEGRADATION:**

The aerobic, aquatic ready biodegradability of RF 3x6 ATC in general accordance with the "Closed Bottle Test", OECD Method No. 301D was determined and found to be readily biodegradable with duplicate removal values of 90% and 84%. The mean removal value was calculated to be 73%, measured at 288,929 mg/kg as a mean average for a BOD (28-Day). The final reading was 93% in an extended 42 Day test regime 369,286 mg/kg. COD was measures as 396,000 mg/kg.

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#### AQUATIC TOXICITY DATA:

Test Results on Foam Concentrate-

##### *Daphnia magna* (waterflea)

24-Hr EC <sub>10</sub> :	>1000mg/L
24-Hr EC <sub>50</sub> :	>1000mg/L
48-Hr EC <sub>10</sub> :	216mg/L
48-Hr EC <sub>50</sub> :	644mg/L
48-Hr NOEC:	260mg/L
48-Hr LOEC:	600mg/L

##### *Oncorhynchus mykiss* (Rainbow trout)

96-Hr EC <sub>10</sub> :	25mg/L
96-Hr EC <sub>50</sub> :	42mg/L
96-Hr NOEC:	25mg/L
96-Hr LOEC:	42mg/L

##### *Fundulus heteroclitus* (Saltwater killifish)

96-Hr EC <sub>10</sub> :	75mg/L
96-Hr EC <sub>50</sub> :	150mg/L
96-Hr NOEC:	75mg/L
96-Hr LOEC:	150mg/L
96-Hr LC <sub>50</sub> :	212mg/L

##### Growth Inhibition for Green Alga (*Selenastrum capriocornutum*)

Cell Count 4-day EC <sub>10</sub> :	5.3mg/L
Growth Rate 4-day EC <sub>10</sub> :	6.9mg/L
Cell Count 4-day NOEC:	5mg/L
Cell Count 4-day LOEC:	8mg/L
Growth Rate 4-day NOEC:	5mg/L
Growth Rate 4-day LOEC:	8mg/L

Date: 22/05/09

2 of 2

These data are intended for the use of a person qualified to evaluate environmental data.

All statements, technical information and recommendations contained herein are of general nature and are based on laboratory tests or literature information we believe to be reliable, but the accuracy, completeness or applicability to particular circumstances is not guaranteed. Solberg Asia Pacific Pty Ltd makes no representation that the customer's use and disposal of the product will comply with all applicable environmental laws, regulations and rules.

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Effect was determined to be algistatic based on the production of cells exposed to 60mg/L test substance during the definitive test.

EC<sub>50</sub> = Median Effective Concentration. It is the concentration of a substance necessary to produce the biological effect under study (immobilisation for Daphnia and reduced light production by microorganisms in the Microtox test) in 50% of the population of a test species exposed to it in a specified time.

### Testing from the German Hygiene Institute (Hygiene Institut Des Ruhrgebiets, Gelsenkirchen):

Test Results on 6% Solution (Highest recommended use concentration of RF 3x6 ATC)

#### Leuciscus idus (5-7cm long in size)

OECD Guideline 203

96-Hr LC<sub>0</sub>: 20g of solution/L  
96-Hr LC<sub>50</sub>: 120g of solution/L  
96-Hr LC<sub>100</sub>: 500g of solution/L

#### Daphnia magna

OECD Guideline 202

48Hr EC<sub>0</sub>: 10g of solution/L  
48Hr EC<sub>50</sub>: 110g of solution/L  
48Hr EC<sub>100</sub>: 500g of solution/L

#### Scenedesmus subspicatus (green algae)

OECD Guideline 201

72Hr IC<sub>10</sub>: 40g of solution/L  
72Hr IC<sub>50</sub>: 220g of solution/L

Conclusion by the Hygiene Institut Des Ruhrgebiets was that Solberg RF 3x6 ATC used at 6% was classified as a "water risk class 1" and a "low hazard to waters". (Report on request)

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**(3% on Hydrocarbon Fuels and 6% on Polar Solvents)**

### ENVIRONMENTAL INFORMATION ON FOAM RUNOFF DURING FIREFIGHTING ACTIVITIES:

Fire fighting services which use Solberg Re-healing Foam™ RF 3x6 ATC™ Foam Concentrate in actual firefighting activities will release RF 3x6 ATC™ in its diluted form to soil and sometimes aquatic environments. The rate of its degradation will depend on the characteristics of the receiving environment. This product is expected to biodegrade rapidly once naturally occurring organisms capable of degrading RF 3x6 ATC™ Foam establish themselves.

### DISPOSAL OF PRODUCT:

For disposal of unused or collected material, Solberg Asia Pacific Pty Ltd recommends disposing of RF 3x6 ATC™ Foam by slowly discharging wastes to a properly operating wastewater treatment system. RF 3x6 ATC™ has no effect on activated sludge (OECD Guideline 209) at concentrations of 1000mg/L (30-Min & 3-Hr). Therefore, RF 3x6 ATC™ can be added to a waste stream at concentrations of >1000mg/L without effecting activated sludge in a wastewater treatment facility. If foaming occurs, reduce the discharge rate. Since regulations vary, consult applicable regulations or authorities before disposal.

Waste Water Treatment flow (L/Hr)	Amount of RF Foam Concentrate (L)	Total Time for Release in:		
		Minutes	Hours	Days
10,000	500	30,000	500	20.8
50,000	500	6,000	100	5.0
100,000	500	3,000	50	2.08

If foaming is a problem, add one of the follow antifoams (Litres per minute).

Antifoams	Waste Water Treatment flow (L/Hr)		
	10,000	50,000	100,000
Henkel WB-209	0.003333	0.016667	0.033333
GE Silicones AF9020	0.003333	0.016667	0.033333
Henkel Foammaster™ DS	0.003333	0.016667	0.033333
Wacker Silicones SRE	0.003333	0.016667	0.033333
Wacker Silicones SWS-214	0.006667	0.033333	0.066667
GE Silicones AF93	0.003333	0.016667	0.033333
GE Silicones AF72	0.003333	0.016667	0.033333
Wacker Silicones SE-36	0.005	0.025	0.05