

## PRODUCT DATA SHEET

**StarShield 250 HC** is a unique blend of polymeric MDI and blended polyol which combine in a 1/1 volume ratio to create a closed cell foam which is highly resistant to penetration and saturation by all hydrocarbons such as crude oil, jet fuel, gasoline and diesel fuel. The formulation is solvent-free to ensure safety and maximum technical performance. **StarShield 250 HC** is also resistant to saturation by salt or fresh water.

**StarShield 250 HC** provides permanent flotation insurance for the pontoons of floating roof tanks. In addition to providing flotation, **StarShield 250 HC** also contains a powerful flame retardant and functions as an anticorrosive to retard pontoon deterioration.

**StarShield 250 HC** can also be installed in the voids of double wall tanks and vessels for LNG storage and transportation.

**StarShield 250 HC** ships by Air, Ocean or Ground "Non-Regulated" – "NonHazmat".

### RECOMMENDED USES

**FLOTATION FOAM:** Seal and repair floating roof pontoons in hydrocarbon storage tanks.

**INSULATION FOAM:** Double wall tanks and vessels for LNG storage and transportation.

**OIL RESISTANT FOAM:** Meets or exceeds requirements of ASTM D-471; MIL-P-21929B

**FIRE RESISTANT FOAM:** Meets or exceeds requirements of ASTM D-1692; MIL-P-21929B

### TECHNICAL INFORMATION

#### PRODUCT CHARACTERISTICS

VEHICLE TYPE .....	Blended polyol/polymeric MDI
PIGMENTATION .....	None
COLORS.....	Standard amber
FINISH .....	NA
THINNER.....	Not normally required
CLEANER.....	Acetone, MEK, DOP or TFT BIO-SOLV
MIXING RATIO .....	/1.0 v/v
INDUCTION TIME.....	Not required
REACTION TIME – CREAM TIME.....	18 - 22 seconds / 77°F
“ “ GEL TIME .....	80 - 90 seconds/77°F
SOLIDS BY VOLUME.....	>2,500%, (25-28X volume increase upon foaming)
FOAM GENERATION .....	Approx. 420 cu.ft. per two drum resin set
CLOSED CELL CONTENT .....	>90%
K FACTOR.....	0.147 BTU-in./Hr./Ft <sup>2</sup>
APPLICATION METHOD .....	Deliver through plural pump with static mixer
STORAGE CONDITIONS.....	Normal, 40°F - 95°F in covered storage.
SHELF LIFE.....	6 months after shipping under protected storage conditions.



## APPLICATION NOTES

**APPLICATION METHOD:** **StarShield 250 HC** is engineered to be installed by pumping through hoses into the spaces being treated. Equal volumes of base and curing agent are metered from bulk containers such as 55 gallon drums then pumped through separate delivery hoses to an in-line static mixing device. The mixed resins are then fed through a single hose to a discharge nozzle for placement in the void spaces being filled. The mixed resin can be hosed in a stream as far as 10 - 12 feet. As the foam expands during cell creation and expansion it forces into leaks and small holes to form a perfect seal. Small residues of hydrocarbons are incorporated into the foam allowing intimate contact with steel surfaces.

The cured resin is an almost perfect “closed cell” system which is highly resistant to saturation by liquids it contacts. The cured resin has been designed to be resistant to attack by all liquid hydrocarbons such as crude oil, gasoline and xylene.

The minimum ambient application temperature is 25°F/-4°C. **StarShield 250 HC** components may be heated prior to spraying to reduce their viscosity. Drum temperatures should not exceed 110°F/43°C to avoid excessive internal pressures. Installation equipment exposed to mixed components is simply cleaned with MEK, Acetone or BIO-SOLV solvents. At the conclusion of each project all material lines are flushed with solvent and the spray unit is left flushed with DOP, (dioctyl phthalate), to keep it in perfect condition until the next project.

### TYPICAL PHYSICAL PROPERTIES:

	Part A (Polymeric MDI)	Part B (Blended polyol)	
Viscosity cps (77°F):	200	120	
Specific Gravity:	1.24	1.14	
Mixing Ratio by volume:	50	50	
<b>FOAM PROPERTIES</b>			
Density, pcf:	2.5 – 2.6	Oil Resistance	
Compressive Strength:		ASTM D-471; MIL-P-21929B:	Pass
10% deflection, ASTM D-1621	>25 psi	Fire Resistance	
		ASTM D-1692, MIL-P-21929B:	Pass
Parallel, psi:	25.1	Immersion Resistance, (1 year+)	
Perpendicular, psi:	31.4	Gasoline	Pass
Compressive Strength Change		Crude Oil	Pass
MIL-P-21929B, % change		Water	Pass
After humid aging:	19.03	Naphtha	Pass
Initial K-Factor, ASTM C-518		Xylene	Pass
BTU/in/hr/sq.ft./°F:	0.15	Toluene	Pass
Shear Strength, ASTM C-273, psi:	25.9	Diesel Fuel	Pass
Tensile Strength, ASTM D-1623, psi:	35.0	Ethanol	Fail
Water Absorption		MEK	Fail
ASTM D-2842, lb/sq.ft.:	0.076		
Closed Cell Content		Tumbling Friability	
ASTM D-2856, %	83	ASTM C-421, % loss	9.7
Compression Set			
MIL-P-21929B, % loss:	0.079		