



FluoSolv[®] Ten-X

Technical Information

High Solvency Non-Flammable Solvent

Introduction

FluoSolv[®] Ten-X is a proprietary blend of non-flammable hydrocarbon (HFC) solvents and trans-1,2-dichloroethylene (t-DCE) designed for cleaning a variety of surface contaminants such as oils, greases and particulate matter.

FluoSolv[®] Ten-X is a drop-in replacement for defluxing blends of n-propyl bromide (nPB), TCE and similar vapor degreasing solvents. It can also be used for cold cleaning applications such as a spray & wipe or a rinsing solvent for cleaning metal or nonmetallic surfaces. Since it is a fast drying (high vapor pressure) solvent it will leave no residue on the surface after spraying and wiping.

FluoSolv[®] Ten-X solvent blending technology leverages the chemical solvency of the fluid as well as its physical properties such as high density, low surface tension and low viscosity for optimal performance.

User Benefits

NuGenTec FluoSolv[®] Ten-X is ideally balanced to deliver performance, worker safety and desirable environmental properties.

- Non-flammable & Non-Toxic
- High Kb value provides excellent solvency for tough to clean residues
- Low global warming potential (GWP)
- Low toxicity; high allowable exposure limit (AEL);
- No ceiling on instantaneous exposure
- Chemically stable; will not go acid

Material Compatibility

FluoSolv[®] Ten-X is compatible with all metals, ceramic and other non-conducting materials. Most elastomeric materials are compatible except fluoroelastomers such as Viton & Kalrez which tend to swell. It is recommended that all materials be tested prior to use. See Table 1.

Table 1: Material Compatibility

	Compatible	Additional Testing Required
Metals	Aluminum, Copper, S/S Titanium, Brass, Tungsten	-
Elastomers	Neoprene, Butyl Rubber	Viton, Kalrez
Plastics	HDPE, PTFE, Nylon, PVC Epoxy, Phenolic	Acrylic, ABS

Table 2: Physical Properties

<u>Property</u>	<u>FluoSolv® Ten-X</u>	<u>Asahi AK-225</u>	<u>TCE</u>	<u>nPB</u>
Boiling Point °C [°F]	38 [100]	54 [129]	87[189]	71[160]
Density at 25°C (77°F) kg/liter [lb/gal]	1.25 [10.5]	1.55 [12.9]	1.46 [12.15]	1.35 [11.26]
Surface Tension at 25°C (77°F) dyne/cm	21	16.2	32.3	25.9
Viscosity at 25°C (77°F), cPs	0.46	0.59	0.54	0.49
Vapor Pressure at 25°C (77°F) kPa	40	38.5	9.9	20.3
Heat of Vaporization @bp cal/g	64.3	35	56	58.8
Global Warming Potential	<30	370	n/a	n/a
Ozone Depleting Chemical	No	Yes	No	No
Volatile Organic Compounds (VOC) g/l	1,029	0	1,470	1,350
Allowable Exposure Limit (AEL) ppm	335	100	10	<10
Worker Exposure Ceiling (ppm)	None	None	30	10
KB Value	95	31	120	125

Worker Safety

Data from acute toxicity studies of various ingredients has demonstrated that FluoSolv® Ten-X blend has low toxicity. It has a calculated AEL (Acceptable Exposure Limit) of 335 ppm based on its individual components. None of the ingredients in FluoSolv® Ten-X have any chronic toxicity associated with them which makes it easier for workers to handle and use.

Please refer to the MSDS for information on detailed exposure limits and toxicity-related data.

NuGenTec FluoSolv® Ten-X exhibits no closed cup or open cup flash point and is not classified as a flammable liquid per established definitions by NFPA or DOT, however being volatile, vapors may become flammable in air. Flash point data and vapor flammability limits in air are shown in Table 3 below .

Table 3: Flammability

	Test Method	FluoSolv® Ten-X
Flash Point (CC)	ASTM D-56	None
Flash Point (OC)	ASTM D-93	None
Flammability in Air	ASTM E681	
Lower Explosivity		6.1 vol%
Upper Explosivity		11.1 vol%

Storage

FluoSolv® Ten-X is thermally & chemically a very stable solvent. It is non-reactive, has low water solubility and will not oxidize or degrade when exposed to air. It is not affected by any sunlight or other sources of UV radiation. Common industrial practice should be implemented for storage; keep away from human food source and extreme temperature conditions. Freezing temperatures will cause the drums to compress and hot conditions will balloon the drum. The product in any case is perfectly usable.

Solvent Recycling

FluoSolv® Ten-X is easy to reclaim and reuse by simple distillation process. Commercially available modular recycling units can easily be added to realize sizable savings in solvent usage. Solvent recovery yields are typically in the range of 80 to 95%.

Please contact the FluoSolv® Technical Services fluosolv@nugentec.com for more information.

Packaging & Availability

FluoSolv® Ten-X is available *only* in 55-gal phenolic lined metal drums (net wt. 550 lbs).

Lead times are 7-10 business days after receipt of order. Call 1-800-409-3142 or email: fluosolvorders@nugentec.com