FluoSolv® 5408

Technical Information

Boeing BAC 5408 Qualified Non-PFAS Cold Cleaning & Vapor Degreasing

Introduction

FluoSolv® 5408 is qualified to the Boeing BAC 5408 specification for vapor degreasing. It is a proprietary blend of nonflammable fluorinated solvents (HFO's) and trans-1,2-dichloroethylene (t-DCE). FluoSolv® 5408 offers a **NON-PFAS** solution to precision degreasing of heavy duty grease and lubricants and also cold cleaning.

FluoSolv® 5408 is a drop-in replacement for many 3M Novec Chemistries.

FluoSolv® 5408 solvent 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. Efficient cleaning requires the solvent to flow extremely close to the surface of the part to dissolve the contaminant or physically lift insoluble particulate contaminants away from the surface to be cleaned.

Fluosolv 5408 does not contain any PFAS per the "EPA Reporting and Recordkeeping Requirements for Perfluoroalkyl and Polyfluoroalkyl Substances", final rule dated September 28, 2023.

User Benefits

NuGenTec's FluoSolv® 5408 is ideally balanced to deliver performance, worker safety and desirable environmental properties while offering a solution that is better for the environment than traditional chemistries.

- **Non-PFAS Formulation**
- Boeing BAC 5408 qualified
- Drop-in replacement for 3M Novec products
- Low global warming potential (GWP)
- Low toxicity; high allowable exposure limit (AEL);
- Non-Flammable; Non-Hazardous
- Chemically stable; will not go acid

Material Compatibility

FluoSolv® 5408 is qualified to everything on the Boeing BAC 5408 specification. Also it is compatible with all metals, ceramic and other non-conducting materials. Most elastomeric materials are compatible. It is recommended that all materials be tested prior to use. See Table 1.

Table 1: Material Compatibility

Required	Compatible	Additional Testing
Metals	Aluminum, Copper, S/S Titanium,Brass, Tungsten	-
Elastomers	Neoprene, Butyl Rubber, EPDM, Kynar (PVDF)	Viton A & B, Kalrez**
Plastics	Acrylic*, HDPE, PTFE, Nylon, PVC, Epoxy, Phenolic, ABS, Polycarbonate*	

** Viton & Kalrez are fluoroelastomers that tend to swell when exposed to fluorinated fluids; dimensional changes are reversible

* *Acrylics & Polycarbonates in stressed conditions are more susceptible to solvent attack at elevated temperatures.*

Table 2: Physical Properties

Property	NuGenTec FluoSolv® 5408	Novec 72DE	HCFC-141b	TCE	nPB
Boiling Point °C [°F]	**47ºC [116ºF]**	43 [109]	32 [90]	87 [188]	71 [160]
Density at 25°C (77°F) kg/liter [lb/gal]	**1.27 [10.8]**	1.28 [10.7]	1.23 [10.3]	1.46 [12.1]	1.35 [11.26]
Surface Tension at 25°C (77°F) dyne/cm	**15.9**	19	19.3	29.5	25.9
Viscosity at 25°C (77°F), cP	**0.41**	0.45	0.43	0.49	0.49
Vapor Pressure at 25°C (77°F) kPa	**44.5**	46.7	79.5	8.0	20.3
Heat of Vaporization @bp kJ/kg	**282**	218	147	236	58.8
Global Warming Potential(GWP/100year ITH)	**<15**	43	725	Low	n/a
Ozone Depleting Chemical	**0**	0	0.10	0	0.026
Volatile Organic Compounds (VOC) g/l	**1207 g/L**	Yes	No	Yes	1,350 g/L
Flash Point °C [°F]	**None**	None	None	None	<10
Worker Exposure Ceiling (ppm)	**None**	None	Not Determined	Not Determined	10
KB Value	**103**	52	56	129	125

Worker Safety

Data from acute toxicity studies of various ingredients has demonstrated that FluoSolv® 5408 blend has low toxicity. It has a calculated AEL (Acceptable Exposure Limit) of 200 ppm based on its individual components. None of the ingredients in FluoSolv® 5408 have any chronic or acute toxicity associated with them which makes it a worker friendly solvent.

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

NuGenTec's FluoSolv® 5408 which is approved to the Boeing BAC 5408 spec exhibits no closed cup or open cup flash point and is not classified as a flammable liquid per established definitions by NFPA or DOT. Flash point data and vapor flammability limits in air are shown in Table 3 below .

Table 3: Flammability

	Test Method	FluoSolv® 5408
Flash Point (CC)	ASTM D93	None
Flash Point (OC)	ASTM D1310	None
Flammability in Air	ASTM E681	

Storage

FluoSolv® 5408 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® 5408 is a stable azeotropic blend 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 group for information.

Product Specifications

FluoSolv® 5408 Composition (Typical)

Qualified to the Boeing BAC 5408 Specification	
Fluorinated Fluid Mixture	<35 wt%
Trans-dichloroethylene	>40 wt%
Water	<100 ppm
Non-volatile residue	<50 ppm (drums) <200 ppm (pails)
Appearance	Clear, colorless

Packaging & Availability

FluoSolv® 5408 is available in three package sizes

- 55-gal lined metal drums (net wt. 550 lbs)
- 5-gal lined pails (net wt. 52.5 lbs)
- 1 gal glass or metal bottle (net wt. 11 lbs)

Note: Drum & Pail have phenolic liner

For orders, call 800-409-3142
Email: FluoSolv@nugentec.com

Lead times are 1-2 weeks after receipt of order.

FluoSolv®