50 Cambridge Drive, Monroe CT 06468 USA
+1 203.590.2000 | +1 800.332.AXEL
www.axelplastics.com

Technical Data Sheet

XTEND® **CF88 CONCENTRATE** Mold Release

Product Description: A **concentrate** of proprietary resin solution comprising modified siloxane-based polymers which after dilution, crosslink and form a semi-permanent release film upon evaporation of the solvent carrier and cure of the polymer.

Use: Once diluted, CF88 Conc-based products can be used for most thermosets. CF88 dilutions are focused for advanced composites, such as: epoxy infusion for wind blades; carbon/epoxy prepregs, while also providing excellent release for vinyl-esters, polyesters, phenolics, etc.

Composition: Proprietary resin solution comprised of modified siloxane-based polymers which crosslink and form a release film upon evaporation of the carrier.

Handling:
Keep container closed when not in use. Store above freezing and below 100°F/38°C.

Features: A highly concentrated semi-permanent with easy application once diluted: Wipe On, Wipe Off; Wipe On, Leave On; or Spray On, Leave On.

This TDS is for dilution of the conc. It will be up to the customer to provide a TDS with application instructions for the finished product.

FEATURES:

Low HAPs	Can be used for most thermosets
Can be used for carbon/epoxy prepregs	

TYPICAL PROPERTIES:

COLOR:	**Clear**
SPECIFIC GRAVITY:	**0.758 @ 25°C / 77°F**
VISCOSITY:	**0 – 15 cps @ 25°C / 77°F**
FLASH POINT:	**7°C / 44.6°F**
SHELF LIFE:	**One year from date of manufacture**
COLOR:	**Clear**

DILUTING XTEND CF88 Concentrate

Continued on the next page are instructions for diluting the CF88 Concentrate.

XTEND® **CF88 CONCENTRATE** Mold Release

DILUTING XTEND CF88 Concentrate

The following instructions will provide three different tables for diluting the CF88 Concentrate.

TABLE #1: One solids level for all three dilutions. The quality of the solvents varies, but the solids content does not. This table contains the highest performance product offered from this concentrate – Best Performance Solids level + Best Solvent Blend

TABLE #2: Best Solvent Blend at three different solids levels – a good, better, best for release performance. The solids levels vary depending on production. For customers that reapply semi-permanents every time, or every other time, the "good" is suitable for us. For customer's wishing to get the maximum number of parts before reapplication, the "Best" should be used.

TABLE #3: Cheapest solvent blend at three different solids levels – a good, better, best for release with lowest cost solvents for non-high-gloss applications. Good Performance + Lowest Cost Solvent is targeted for when customers reapply every time, but still want to use a semi-permanent. This is common for wind blade production in some countries.

RECOMMENDED SOLVENTS

TABLE #1 - 9:1 Concentrate Reduction HIGH PERFORMANCE SOLIDS LEVEL with Different Solvents to Control Cost					
Concentrate	10	**Concentrate**	10	**Concentrate**	10
Isopar E	45	VM&P	45	Isopar E	45
Odorless Mineral Spirits	45	Odorless Mineral Spirits	45	SBP 140/165	45
total	100	**total**	100	**total**	100
Best Solvent Blend		**Better Solvent Blend**		**Good Solvent Blend**	

Products made from TABLE #1 will provide the best cosmetics and maximum performance. The cosmetics are not as good as cheaper solvent blends are chosen. The above dilutions are meant for those customers wishing to get the maximum amount of parts/pulls/prints before reapplying the finished, diluted release agent. The above dilutions should not be used for customers who reapply every time or every other time.

TABLE #2 GOOD, BETTER, & BEST Performance (solids) with BEST SOLVENTS RECOMMENDED					
Concentrate	10	**Concentrate**	6.25	**Concentrate**	3.75
Isopar E	45	Isopar E	46.88	Isopar E	48.2
Odorless Mineral Spirits	45	Odorless Mineral Spirits	46.87	Odorless Mineral Spirits	48.05
total	100	**total**	100	**total**	100
Best Performance High Solids		**Better Performance Medium Solids**		**Good Performance Low Solids**	

Products made from Table #2 will provide the highest quality cosmetics but are geared to solids levels/performance appropriate for different manufacturing methods. Column #1 in this table is the same as column #1 in Table #1. Lower solids are designed for customers who prefer to reapply often. Good Performance from Table #2 is intended for customers who need excellent cosmetics but prefer to reapply every time or every other time.

XTEND® **CF88 CONCENTRATE** Mold Release

TABLE #3 **GOOD, BETTER, & BEST Performance (solids) with LOWEST COST SOLVENTS**					
Concentrate	10	**Concentrate**	6.25	**Concentrate**	3.75
Heptane	45.0	Heptane	46.88	Heptane	48.2
Odorless Mineral Spirits	45.0	Odorless Mineral Spirits	46.87	Odorless Mineral Spirits	48.05
total	100	**total**	100	**total**	100
Best Performance **High Solids**		**Better Performance** **Medium Solids**		**Good Performance** **Low Solids**	

Table #3 is for the most cost sensitive markets. The lower cost solvents used here are not intended for high gloss/high cosmetic value. The highlighted cells are for producing competitively priced XTEND 1088WE for Chinese wind blade producers.

The solvents listed, and ratios are suggested starting points based on laboratory results.
Dilution ratios are based on weight. SBP 140/165 is made by Shell (hydrotreated White Spirit) and not available in the USA.

General Instructions for the Dilution of AXEL Plastics Concentrates

- The vessel used to mix the concentrate and solvent must be free of any foreign contamination. A solvent rinse of the vessel should have less than 70 ppm water and 0.00% solids. The solvent selected for cleaning should be one of the solvents used to dilute the concentrate.
- All solvents used to produce the dilution MUST have less than 40ppm water content.
- The Karl Fisher Test method *QSI-430 013A-Karl Fisher(C).pdf* is available upon request.
- The vessel must be 100% free of any alcohols.
- AXEL recommends that each can/package of concentrate should be used all at once when diluted. Leftover partial cans/packages of concentrates should not be used – please use the entire package or dispose of any remaining concentrate.
    - AXEL is happy to provide different package sizes of the concentrate so that the entire contents of the concentrate package can be diluted at once not leaving a partial.
- When diluting larger drum packaging with multiple openings (bungs), AXEL requires a desiccant drier cartridge/tube to be attached to the air inlet of the drum to ensure only moisture free air enters the drum. Please see AXEL's .pdf on drier use for more details and suggestions.

Mix well to ensure a homogeneous solution. A clean, stainless steel mixing blade at enough RPM to create a vortex in the liquid for 30 minutes is generally enough for mixing.

- Concentrate should be added to dilution mixture and mixed per above instructions.
- Axel suggests checking the concentrate compatibility in a small batch when using different solvents to ensure the diluted product is stable.

- After filling the diluted product into the proper can/packaging, the diluted product should be covered/blanketed with nitrogen before capping or closing the container. Nitrogen should be free of water and at least 99.5% purity. Dry Nitrogen such as Praxair P-4631, CAS # 7727-37-9 is an example of suitable nitrogen.
- Caps should be moisture barrier type to ensure no water vapor enters the packaged product. (See Figures 2 and 3)

Figure 1 Example of dessicant drier cartridge attached

Figure 2 & 3 showing cans with seals and lids

Review SDS before use