

## SmartFlex Washout Solution NF Technical Bulletin/Distillation Procedure February 2011

SmartFlex Washout Solution NF is a solvent designed for effective washout of photopolymer, flexographic printing plates. The initial boiling point of the solvent is 365° F, and has a final boiling point of 405° F. This range is for all individual components in the blend. The Tag Closed Cup flash point of SmartFlex Washout Solution NF is 145° F.

Due to the relatively narrow boiling range of SmartFlex Washout Solution NF, vacuum distillation, for recovery, is well suited. SmartFlex Washout Solution NF is readily distillable in virtually all, commercial vacuum distillation equipment. SmartFlex Washout Solution NF is a relatively safe solvent. However, the flash point is substantially lower than its boiling point. Therefore, SmartFlex Washout Solution NF distillation must be performed in an apparatus that is designed and certified for flammable liquids. At no time should solvent vapors be exposed to temperatures above its flash point outside of a sealed still that is completely purged of air. Also be sure that the waste drum used while dropping the still bottom is grounded. Still bottoms should be cooled to a safe temperature before dumping, especially if cook down is not complete.

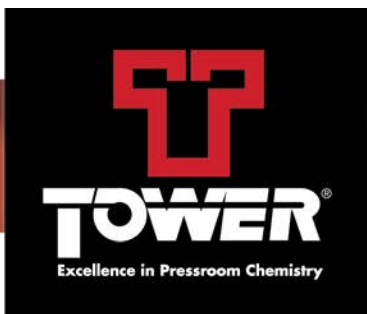
SmartFlex Washout Solution NF is designed as a very low odor solvent. A thorough evacuation of previous chemistry in the still, holding tanks, etc., should be performed before starting with SmartFlex Washout Solution NF. It takes only a 4-5% of contamination of other competitive solvents for the SmartFlex Washout Solution NF to pick up undesirable, nuisance odors of the previous solvent.

The thermal oil temperature should be set at 365° F. - 375° F. This thermal oil temperature is optimal if your still will pull vacuum in the range of 27 to 28 inches Hg. Vapor temperature will range from 245° F. to 292° F. final during the distillation run.

Typical flow rates for larger stills (120 – 150 gal. still pots) is 22 gallons per hour. Typical washout systems with an automatic rinse/replenishment feature will load monomers into the solvent at an eight to nine percent range by weight. Typical recovery of solvent is 90 to 91%.

A visual inspection of solvent flow through the site glass will be necessary on your first couple of runs to determine the effective cook down time in your still. As vapor temperature rises to 300° F., this should coincide with decreased or end of carry over flow and signal the end of your cook down.

If you are a plate-makers, with in-house distillation it is important that proper thermal oil temperature, adequate vacuum, and corresponding vapor temperatures are achieved, to ensure that SmartFlex Washout Solution NF is carried over in the process homogeneously. By homogeneously we mean that all of the components of (*continued*)



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SmartFlex Washout Solution NF are carried over simultaneously. This will ensure that the solvent in the clean solvent recovery tank is of virgin Smart Flex Washout Solution NF quality.

When running a distillation of SmartFlex Washout Solution NF in a closed loop production environment it is important to recover all of the components of SmartFlex Washout Solution NF simultaneously. As a general rule of vacuum distillation the thermal oil should be set 100° F. above that of the target vapor temperature. The amount of vacuum present during distillation plays an important role in determining the proper oil and vapor temperature. The higher the vacuum, allows for lower thermal oil and vapor temperatures needed for homogeneous recovery. Refer to the chart below for correct settings based on system vacuum.

<b>Vacuum (in. Hg)</b>	<b>Vapor Temp. °F.</b>	<b>Vapor Temp. °C.</b>	<b>Thermal Oil °F.</b>
28	249	121	349
27	268	131	368
26	284	140	384
25	295	147	395

If you have any other questions, please contact us at 610.253.6206 or by email at [info@towerproducts.com](mailto:info@towerproducts.com).