

# Smopex<sup>®</sup>

## Recommendations for use Batch Process



Fibre Selection: This is dependent on the speciation of the precious metal in the reaction medium. As a guide:

44568	Smopex-101	Strong acid cation exchanger
44705	Smopex-102	Weak acid cation exchanger
44706	Smopex-103	Strong base anion exchanger
44710	Smopex-105	Weak base anion exchanger
44724	Smopex-110	Chelating anion exchanger
45027	Smopex-111	Neutral ligand exchanger

**Preparation of fibres for use:** Wash fibres in the reaction solvent or other suitable solvent prior to use.

**Quantities for dosage:** Initial test for fibre affinity with the metal complex: Use 0.5g fibre per 50ml of solution (this should give a metal loading of approx. 1 wt% for 100ppm of metal in solution). Good indication of metal uptake is a colour change in the solution.

Once the optimum fibre is selected, a loading of 2-10wt% would be expected from organic solutions and 25wt% from aqueous solutions. The quantity of fibre should be decreased according to this.

**Solvent compatibility:** The Smopex fibres have been used in, and are insoluble in, a range of common solvents such as water, DMF, THF, methanol, toluene, acetone, DCM. They can also be used over a wide pH range.

**Temperature stability:** The fibres are commonly used up to 100°C but in some cases have shown good performance up to 200°C depending on the particular solvent being used. For higher temperature stability, modifications can be made to the fibres.

**Stirring mechanisms:** The core products have a fibre length of 0.25mm and can be mixed with any normally used agitator that is suitable for mixing particulates in solvents. To ensure that maximum metal uptake is achieved it is recommended that the solution is stirred continuously during metal recovery. Longer fibres are available and when using these, a higher sheer stirrer is recommended (turbine stirrer).

**Recommended filtering equipment:**

Lab scale: Fibres can be filtered on a normal filter paper in a buchner funnel and using a filter cloth (10-50µm for 0.25mm fibres, 100µm for 2mm fibres).

Commercial scale: The fibres have been successfully filtered using candle (FundaBac type), plate (Niagara), bag (GAF) and Nutsch type filters.

*The details in this leaflet are to be used as a guide for initial Smopex testing.*

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