



## Solvents for the extraction of metals



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Because the production process of **Sasol Wax** Liquid Paraffins is totally synthetic, unique normal alkanes having low aromatic contents, negligible sulfur levels and which are practically odourless and colourless, are produced. These unique properties enable us to offer a range of superior environmentally friendly products which sets them apart from the liquid paraffins derived from crude origin.

Our aliphatic **SSX** range is approved for use as metal extraction diluents for cobalt, nickel, copper, gold and zinc solvent extraction (SX) circuits. Importantly, our aliphatic diluents have proved to be the preferred diluent for the extraction of cobalt (Co) or for circuits which contain significant amounts of cobalt and nickel (Ni) making them susceptible to diluent oxidation.

Diluent oxidation causes the introduction of carboxylic acids and the formation of sodium carboxylates into the organic phase. The presence of carboxylic acids causes a significant fall-off in the Co/ Ni separation factor. Sodium carboxylates interferes with the phase break causing drastic deterioration over time which eventually results in the failure of the circuit. Diluent oxidation in the absence of an anti-oxidant is very much faster for an aromatic diluent than for an aliphatic diluent. Therefore, aliphatic SX diluents are the preferred diluents in SX circuits in which the metals present promote the oxidation of the diluents.

Our **SSX** diluents are also used on plants where low aromatic levels in diluents are preferred for health reasons and due to the environmental limits placed on total aromatic emissions. The inert nature of our **SSX** range of diluents and the low aromatic content makes them suitable for use in such circuits. The aliphatic **SSX** range is free of poly aromatic compounds which are known carcinogens.

Overall, our aliphatic **SSX** diluents are preferred in SX circuits containing metals which promote the oxidation of the diluent; in SX plants that are health and safety conscious and those that prescribe to a low level of aromatic emissions for environmental reasons.

### Typical specifications of Sasol Wax SSX

Properties	Units	Method	Product			
			SSX 150	SSX 210	SSX 230	SSX 250
Viscosity at 40°C	cSt	ASTM D 445	1.19	1.9	2.4	2.78
Flash point	°C	ASTM D 93	40 min.	80 min.	110	110 min
Aromatics	mass %	ASTM D 1840	0.3 max.	0.3 max.	0.5 max.	0.3 max.
Copper corrosion		ASTM D 130	1a	1a	1a	1a
Density at 20°C	kg/ l	Sasol 1.173	0.73	0.75	0.76	0.77
Odour			Neutral	Odourless		Odourless