



Escaid™ diluents, the solution for efficient solvent extraction

In the metal extraction process, the diluent plays a key role in the overall efficiency, reliability, and stability of the process. Diluent selection requires balancing cost, availability and safety aspects with extraction efficiency and process stability.

When selecting a diluent for your process, consider the following key potential benefits of using Escaid diluents in solvent extraction:

 Fast separation phase	 Cost effectiveness to refill	 Reduced risk of disruption in the extraction process	 Improved operator safety relative to alternatives
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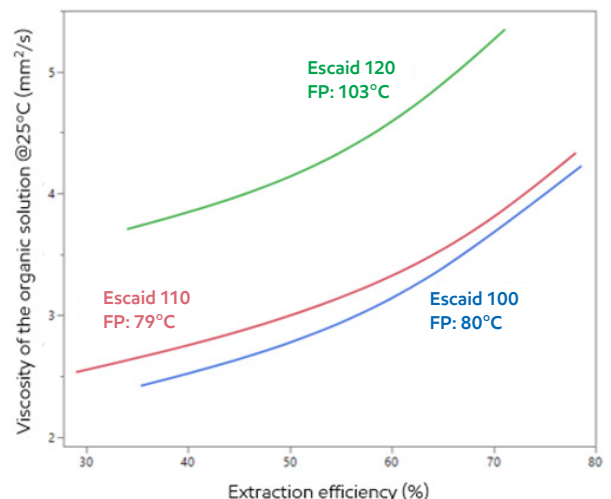
The wide portfolio of Escaid fluids provides a range of flash points and a combination of properties suitable for a variety of process requirements.

Fast separation phase

Process designers need to balance competing performance requirements to achieve optimal extraction efficiency while reducing phase separation time, crud formation, and entrainment losses. Escaid fluids enable fine-tuned operations and achieve the desired efficiency due to their wide range of available flash points, viscosities, and aromatic contents.

The figure at right shows the viscosities of several diluents at different levels of extraction efficiency obtained by increasing the proportion of LIX® 984N extractant¹ by volume. Escaid 100 and Escaid 110 fluids show the lowest viscosity, generally correlating with a lower settling time. The main difference between Escaid 100 and Escaid 110 is the aromatic content. Both fluids have been products of choice for metal extraction for decades.

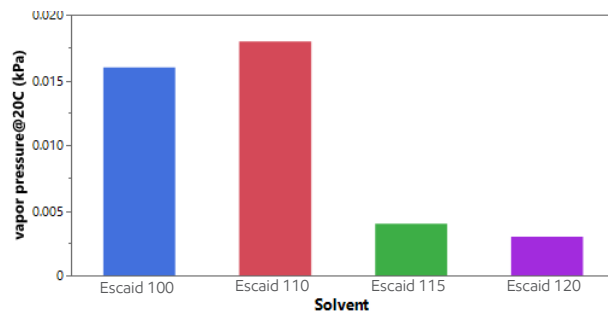
In some newer extraction processes, operating windows have shifted from ambient to higher temperatures, where a product with higher flash point like Escaid 115 or Escaid 120 fluid could be preferred.



Viscosity of the organic solution vs. extraction efficiency by increasing LIX®984N extractant concentration different diluents¹

Cost effectiveness to refill

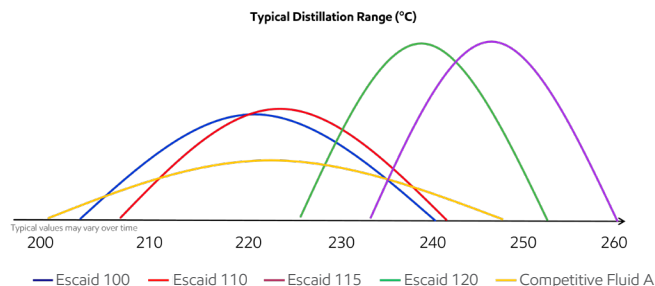
Solvent losses via evaporation or entrainment are a significant contributor to an extraction plant's operating costs. Escaid fluids have demonstrated a limited evaporation rate, especially in open air, due to their high boiling points and low vapor pressures. Losses via entrainment can be limited due to their low aromatic content, low density, and low viscosity versus high flash kerosene.



Vapor pressure at 20°C² of the Escaid fluids portfolio

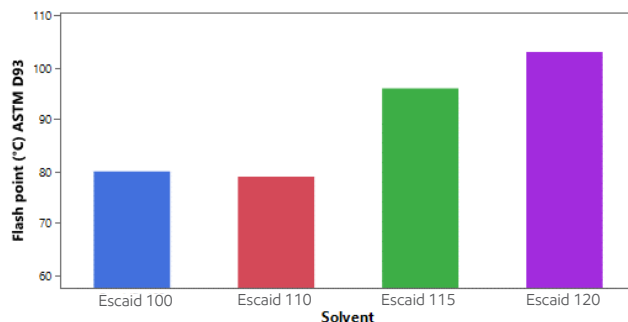
Mitigated risk of disruption in the extraction process

Evaporation or entrainment of the lighter molecules in wide boiling range diluents leads to an increase of specific gravity and viscosity that can hinder the separation and settling steps. Due to their narrow boiling range, Escaid fluids offer limited variability in fluid properties over time on stream, which contributes to process stability irrespective of evaporation losses.



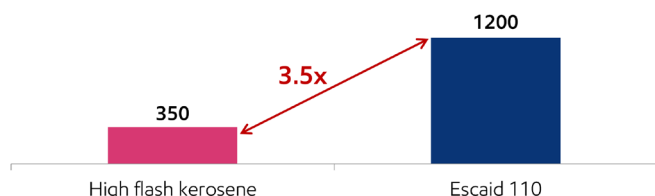
Contributions to operator safety and comfortable working environment

There are two main parameters that govern the safety profile of a diluent: flash point and occupational exposure limits. The Escaid fluids portfolio offers a range of high flash point products—around 80°C and above—to mitigate fire risks.



Flash point² of the Escaid fluids portfolio

Occupational Exposure Limits (OEL) (mg/m³)



The low aromatic content of the Escaid fluids results in increased occupational exposure limits compared to non-hydrogenated products².



For more data (distillation range, reactivity...), watch our seminar.



Our technical team remains at your convenience to support you in your diluent selection.

1 Data generated by or on behalf of ExxonMobil with BASF extractant in ExxonMobil laboratory.

2 Data from tests performed by or on behalf of ExxonMobil. All data are typical. Typical values may vary over time.

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