

SHELL RISELLA X OILS IN TEXTILE AUXILIARY FORMULATIONS



Shell Process Oils

UNLOCKING COMPETITIVE ADVANTAGE

UNDERSTANDING YOUR NEEDS

Textile auxiliary formulations are critical in the manufacturing processes for yarns, nonwoven fabrics and all valuable products made from fibres. They prevent wear and rupture of the fibres, avoid electrostatic charging of fibres and reduce dust formation on fibres and roller points. These formulations can be applied either as an emulsion with water as a spin finish or pure as coning oil.

At Shell, through working closely with the world's leading textile auxiliary manufacturers, we understand your challenges. We appreciate that to succeed in the competitive global marketplace it is essential to maximise productivity and process efficiency, while minimising emissions and avoiding ageing effects and discoloration of the fibres.

The Shell Risella X range is the next generation of process oils based on gas-to-liquids (GTL) technology. They have been developed to unlock competitive advantage because they offer

- excellent performance
- extra purity.

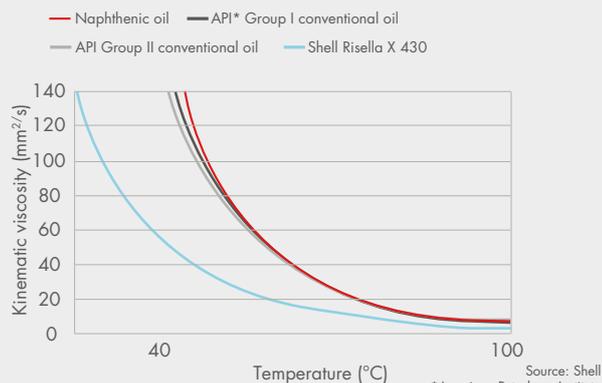


Figure 1: The viscosity of Shell Risella X oils is less influenced by temperature changes than other process oils typically used in such applications.

Performance at a glance

EXCELLENT PERFORMANCE	Process efficiency and reliability	Enhanced workplace conditions	Product quality and consistency
EXTRA PURITY	Technical white oil classification FDA 178.3620 (b)	Very low polycyclic aromatic hydrocarbon (PAH) levels	

PROCESS EFFICIENCY AND RELIABILITY

During the production of yarn, there is usually an increase in speed and temperature during the spinning phase followed by a return to a lower speed and ambient temperature during winding and coning. In order to maximise process efficiency, the oil should minimise friction while maintaining good lubricating properties.

Shell Risella X oils offer good process efficiency, as the viscosity of Shell Risella X oils is less influenced by temperature changes than that of other process oils typically used in such applications, as shown in Figure 1.

In fact, Shell Risella X oils have a high viscosity index, which indicates that their viscosity is relatively unaffected by temperature changes. Therefore, the viscosity of a Shell Risella X oil can be similar to another process oil at, for instance, 100°C but much lower at 40°C.

Shell Risella X oils also demonstrate excellent low evaporation losses compared with conventional mineral oils, even though they have lower viscosities than comparable products. This property helps to minimise drying out and loss of performance.

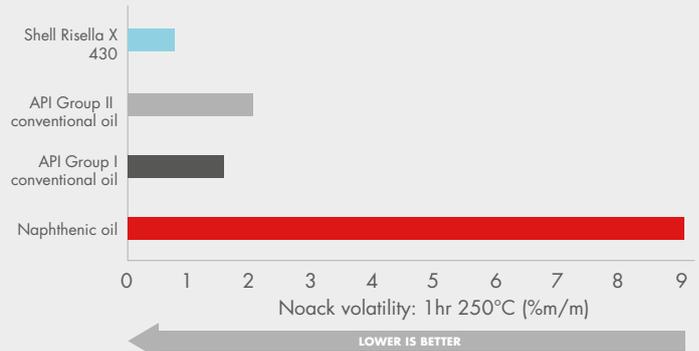


Figure 2: Evaporation loss for Shell Risella X 430 and mineral oils. The conventional oils shown have approximate viscosities of 100 mm²/s at 40°C; Shell Risella X 430 has a viscosity of 43 mm²/s at 40°C.

ENHANCED WORKPLACE CONDITIONS

Limiting oil evaporation can enhance the safety and security of operations because there is less potential for fuming and mist. This supports a cleaner environment for people working in the plant. Shell Risella X oils are synthetic process oils that, when compared with traditional mineral oils, offer very low volatility and so reduce the possibility of mist formation (see Figure 2) and also fume less when tested in the laboratory at elevated temperatures (see Figure 3).

Shell Risella X 415

Group II conventional oil



Figure 3: When heated to 200°C, Shell Risella X 415 oils fumes less than Group II conventional oils. The oils used have comparable viscosities to each other at 40°C.

Source: Shell

PRODUCT QUALITY AND CONSISTENCY

Using textile auxiliaries that have a bright colour and maintain their light and thermal stability can help to reduce the risk of yellow staining and discoloration of fibres. This could minimise the need to rigorously wash the fibres after production. Shell Risella X oils are colourless and offer outstanding light stability.

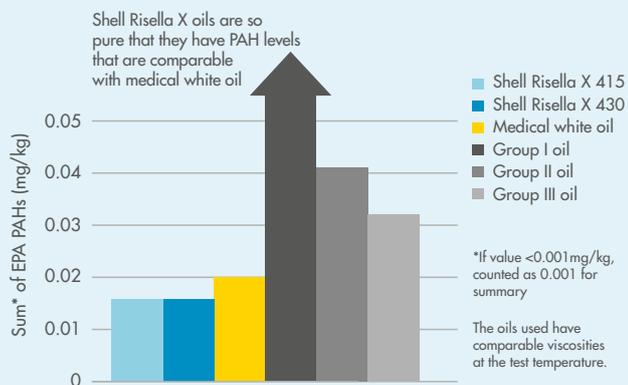
	Shell Risella X 415/420/430	Group I oil	Group II oil	Group III oil
Fresh				
72 h				
168 h				

UV stability test: The oils used have comparable viscosities to each other at the test temperature.

Source: Shell

VERY LOW PAH LEVELS

Shell Risella X oils have very low PAH levels that are comparable with medical white oils. Their purity is in line with the requirements for formulations that meet more stringent legislation, which makes them appropriate for applications requiring higher levels of purity.



Source: Shell

TECHNICAL WHITE OIL CLASSIFICATION (FDA 178.3620 (B))

Shell Risella X oils' extra purity is demonstrated by the fact that they meet and exceed the FDA standard requirements (FDA 178.3620 (b)).



FIND OUT MORE: TALK TO SHELL PROCESS OILS

If you are interested in unlocking valuable competitive advantage, talk to Shell about the benefits that Shell Risella X oils could have for your business.



www.shell.com/processoils