



**FRESH SOLUTIONS
FOR PAINTS
AND COATINGS**

Shell
GTL Solvents

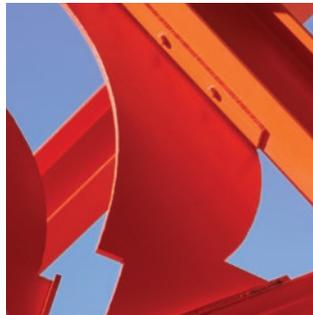
SHELL GTL SOLVENTS ARE NEXT GENERATION, HIGH PURITY PARAFFINIC FLUIDS BASED ON INNOVATIVE GAS-TO-LIQUIDS TECHNOLOGY.

Their unique synthetic composition, with low aromatics content and odour, may enhance various performance properties over conventional solvents in paints and coatings formulations.

WHY CHOOSE SHELL GTL SOLVENTS?

These premium quality materials offer a unique set of characteristics:

- **Reduced environmental impact:** low aromatic and naphthenic content, designed to promote better biodegradability, lower ecotoxicity and lower photochemical reactivity compared to conventional crude-derived solvents.
- **High purity:** synthesised from methane gas, GTL Solvents comprise mostly iso and normal paraffins. They have a bright and clear appearance.
- **Low odour:** their full paraffinic nature, and the very low levels of aromatics, sulphur, olefins and naphthenes, give the GTL products their typical very low odour levels.
- **Synthetic:** GTL technology is based on natural gas feedstocks. This process synthesises products with consistent paraffinic composition, quality and stability.



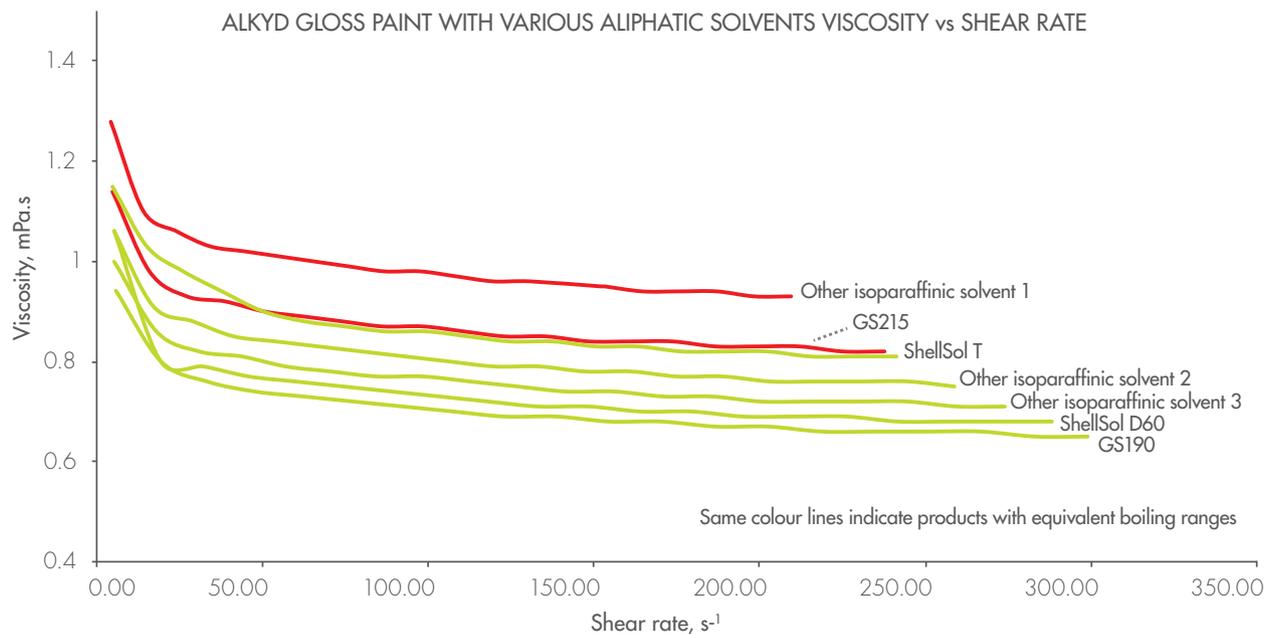
COMPARATIVE TEST RESULTS

The PRA Coating Technology Centre has undertaken an extensive test programme comparing the performance of GTL Solvents with that of conventional isoparaffins and other hydrocarbon solvents.

Tests found that GTL Solvents performed on a par overall with their isoparaffin counterparts, but with two notable benefits:

- Lower viscosity of paint formulation
- Longer wet edge time

VISCOSITY OF PAINT FORMULATIONS – TEST RESULTS



Benefits related to viscosity can include:

- Lower viscosity facilitates the manufacture of alkyd gloss paints by easing mixing and pumping operations.
- When formulated to a particular solids content, GTL-based paints may improve the application of paint, providing a more even spreading.
- When formulated to a particular viscosity, less solvent is required, resulting in thicker films and so allowing for fewer layers of paint to be applied to reach the same final protection.
- GTL-based paints may be formulated more easily to comply with VOC Directives.



WET EDGE TIME – TEST RESULTS

Solvent used in paint formulation	Film Properties	2 minutes	5 minutes	10 minutes
GTL GS190, 215	Wet	Good	Good	Slight brush drag
	Dry	Join not visible	Join not visible	Join not visible
Other isoparaffinic solvents	Wet	Good	Slight brush drag	Slight brush drag
	Dry	Join not visible	Join not visible	Visible join
ShellSol T	Wet	Good	Slight brush drag	Slight brush drag
	Dry	Join not visible	Visible join	Visible join
ShellSol D60	Wet	Good	Good	Good
	Dry	Join not visible	Join not visible	Visible join

Longer wet edge time allows painters to re-paint imperfections for an extended time, without leaving noticeable joins in the final coating.

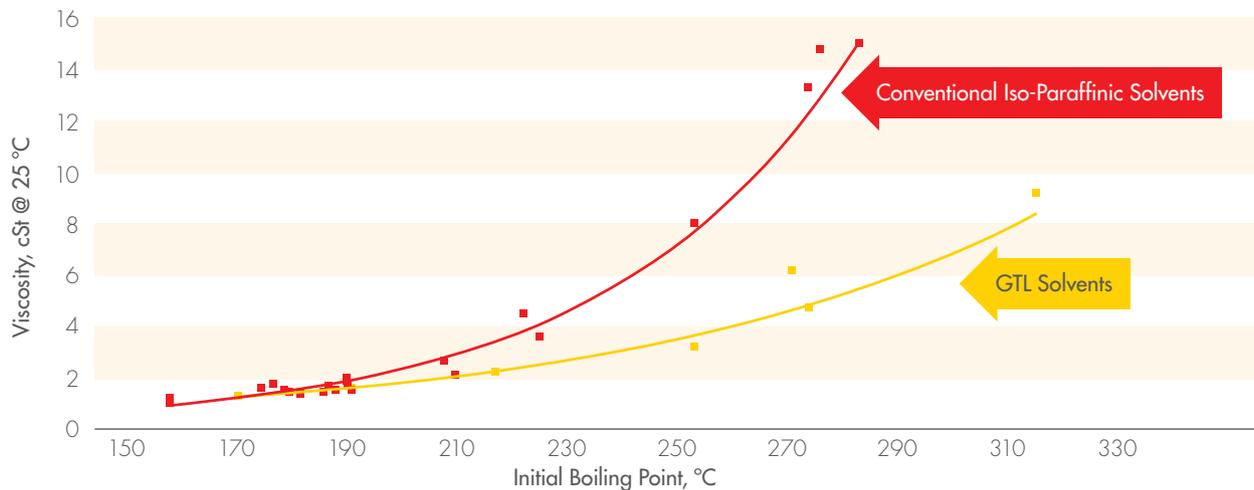
Typical properties of Shell GTL GS Solvents for paints and coatings

Product	Distillation, Initial Boiling Point	Distillation, Final Boiling Point	Flashpoint, °C	Aniline Point, °C	Viscosity, mm ² /s at 25°C
Shell GTL Solvent GS 190	187	205	63	82	1.6
Shell GTL Solvent GS 215	218	247	85	87	2.2

GTL Solvents are particularly suitable for, but not restricted to, use in alkyd paint formulations. Based on our in-depth knowledge of hydrocarbon solvents in general, and more specifically of isoparaffins, we would expect the principal benefits of using our GTL products in paints and coatings to be:

- **Low odour** – The paraffinic nature of GTL products, combined with their very low levels of odorous components such as aromatics or sulphur, contribute to low odour paints.
- **Controlled drying time** – A range of narrow boiling point GTL solvents is available. This allows the selection of the optimal drying rate, while benefiting from the typical GTL characteristics.
- **Improved rheology** – The inherent low viscosity of GTL solvents over conventional solvents may improve flow-related properties.
- **Eco-labelling** – Low impurity levels, low photochemical reactivity, and better biodegradability, which is typical for GTL products, may help in meeting eco-label criteria.

Viscosity of GTL and Conventional Solvents



WORKING WITH SHELL CHEMICALS

We have been working with solvents customers for more than 80 years and have the key factors in place to meet customer needs.

Continuous innovation

Shell maintains its focus on technology & innovation in order to meet customer needs and help them compete in the marketplace.

A broad product line

Our wide range of solvents enables us to cover most – if not all – of our customers' solvents requirements. In this way we can help to rationalise and reduce the costs of procurement.

Global security of supply

Shell chemicals companies are leading global suppliers of solvents, with strategically located plants and a record of reliable supply. We work with distributors to optimise product supply.

Consistency of product quality

Long-term production experience and development of proprietary Shell processes deliver products of high quality and consistency.

Multiple sales channels

By delivering both directly to customers and via our distributor network, we have access to the options that will enable us to best meet the individual needs of our customers.

Experienced support staff

Shell Chemicals employees have in-depth knowledge of their solvents products, applications, and known health, safety and environment issues. Local sales staff are experienced and trained to identify and meet customer business needs.

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