GTL*) Base oils
Product Stewardship Summary

CAS numbers:

848301-69-9

1262661-88-0

Chemical formula:

Not applicable, GTL substances are considered to be Substances of Unknown or Variable composition, Complex reaction products or Biological materials (UVCB).

What are GTL Base oils?

They are synthetic paraffinic base oils obtained using Fischer-Tropsch Synthesis of natural gas.

How are GTL Base oils used?

GTL base oils can be used as process oils for production of thermoplastic elastomers, in cosmetics, petroleum jellies, cable fill and more (this applies to Shell Risella X and Ondina X grades). Other GTL base oils (GTL Qatar grades) are used for blending of finished lubricants.

Health, Safety and Environmental considerations

GTL Base oils have a flashpoint above 200 °C and an initial boiling point of above 280 °C. They are not flammable according to UN GHS criteria, but will burn. They are neither self-reactive, nor self-heating and do not undergo exothermic decomposition when heated.
Due to potential reactions with oxidizing materials such base oils should be stored separately.
The recommended storage temperature should not exceed 50 °C.

GTL Base oils are of low toxicity when inhaled, swallowed or in contact with skin in laboratory animals. No irritation of skin or eyes has been observed and there is no evidence of allergic skin reaction or respiratory sensitization from animal studies. If skin is not properly cleaned, pores may be clogged and result in oil acne or folliculitis. Inhalation of oil vapours or mists may cause respiratory irritation. Therefore, an occupational exposure limit (OEL) of oil mists at the workplace of 5 mg/m^3 based on the recommendation of the American Congress of Governmental Hygienists (ACGIH) should not be exceeded. Appropriate personal protection equipment as well as procedures for safe handling and risk management controls as described in the current Shell Lubricant Safety Data Sheet should be applied.

Depending on the kinematic viscosity some GTL base oil grades can pose an aspiration hazard. Aspiration of low viscosity grades into the lungs when swallowed or vomited may cause chemical pneumonitis, which can be fatal.

It can be concluded from studies on the mutagenic potential of GTL products that they are not considered to be germ cell mutagens and not expected to be carcinogenic. No evidence of developmental and reproductive toxicity in this type of lubricant base oils was shown in studies with laboratory animals.

Based on the above GTL base oils are generally not considered to be hazardous, however, some GTL Base oils with kinematic viscosities below 20,5 mm/s^2 at 40 °C are classified for aspiration toxicity, category 1 (H 304) according to UN GHS criteria.

The product is poorly soluble in water and will float on water. Therefore, tests on short- and long-term aquatic toxicity with fish, invertebrates and algae were carried out on water accommodated fractions and led to the conclusion that these base oils are non-toxic to aquatic organisms.

GTL Base oils are UVCB substances (see explanation under "Chemical formula"). Based on the available compositional information, measured and predicted data it can be concluded that the major constituents are readily or inherently biodegradable. The presence of constituents with a certain environmental persistence or a bio-accumulation potential cannot be excluded.

Following UN GHS criteria, GTL Base oils are not classified for environmental hazards.

This material is liquid under normal conditions at room temperature and if enters soil it will quickly adsorb to soil particles, biodegrade reasonably quickly (half life of approximately 36 days), be of low mobility and not contaminate ground water.

The health, safety and environmental considerations above are not applicable for used oil, as this may contain more hazardous substances present as a consequence of different applications of this base oil, for which specific additives or other substances may have been introduced.

Storing and transporting GTL Base oils

Paraffinic base oils are mainly transported by road or rail.

The temperature during storage and transportation should not exceed 50°C.

Precautionary measures against static discharges must be undertaken during loading and unloading and all operators must wear personal protective equipment.

Storage tanks should be made from mild steel.

Risk Characterization Summary

Risks associated with exposure to these products have been evaluated for the following

"chain-of-commerce" activities: manufacture, storage, product transfer, transportation, and customers / markets. They are manufactured, stored and transported to customers in closed systems. Product is considered to pose low risk in all applications due to the non-hazardous nature of the product.

This product stewardship summary is intended to give general information about the chemical or categories of chemicals addressed. It is not intended to provide an in-depth discussion of health and safety information. Additional information is available through the chemical's applicable Safety Data Sheet, which should be consulted before use of the chemical. This product stewardship summary does not supplant or replace required regulatory and/or legal communication documents.

Shell GTL Base Oils linked to CAS number 848301-69-9:

- Qatar GTL QHVI 3
- Qatar GTL QHVI 4
- Qatar GTL QHVI 8

Shell GTL Process Oils linked to CAS number 848301-69-9:

- Risella X 415
- Risella X 420
- Risella X 430

Shell GTL Process Oils linked to CAS number 1262661-88-0:

- Ondina X 415
- Ondina X 420
- Ondina X 430

*) GTL "Gas-To-Liquids": Conversion of natural gas into middle distillates, solvents and waxes using the Fischer-Tropsch process.