Technical Data Sheet

Previous Name: **Shell Thermia C**

Shell **Heat Transfer Oil *S2 X***

- *RELIABLE PERFORMANCE*

High Performance Heat transfer fluid

Shell Heat Transfer Oil S2 X is a premium quality heat transfer fluid for use in indirectly heated closed heat transfer systems. It is based on carefully selected highly refined mineral oils chosen for their ability to provide superior performance in heat transfer systems and contains an oxidation inhibitor to provide long service life.

Applications

- ***Industrial heat transfer systems***
  For use in closed heat transfer systems used in chemical and process plant, textile manufacture etc. where the oil is circulated in a pumped system operating under atmospheric pressure with or without an inert gas blanket.

  Shell Heat Transfer Oil S2 X can be used in high temperature continuous heat transfer equipment with the following application limits:

Max. film temperature	315°C
Max. bulk temperature	290°C

Performance Features and Benefits

- ***Extended maintenance intervals***
  Shell Heat Transfer Oil S2 X is based on carefully selected highly refined mineral oils and resists oil cracking, oxidation and thickening. This provides extended oil life, provided efficient fluid heating and good pump circulation is ensured, such that film temperatures on the heater surface do not exceed the limits above.
- ***System efficiency***
  Low viscosity enables excellent fluidity and heat transfer over a wide temperature range.
  Shell Heat Transfer Oil S2 X also has a low vapour pressure so resists cracking. This minimises the formation of volatile decomposition products; these would require recovery via expansion chamber and condensate collector
- ***Wear protection***
  Shell Heat Transfer Oil S2 X is non-corrosive and has high solvency – this reduces deposit formation by holding oxidation products in solution and keeping internal surfaces of heat exchangers clean.

Specification and Approvals

Classified under ISO 6743-12 Family Q
Meets DIN 51522 requirements

Advice

The service life of Shell Heat Transfer Oil S2 X depends on the design and operation of the system. If the system is well designed and not subjected to abnormal workloads, the life can be many years.

It is important to monitor oil condition regularly as rates of change in physical characteristics are more significant than actual values. The properties that should be monitored are viscosity, acidity, flash point (open and closed) and insolubles content.

Advice on applications not covered in this leaflet may be obtained from your Shell representative.

Health and Safety

Guidance on Health and Safety are available on the appropriate Material Safety Data Sheet, which can be obtained from your Shell representative.

Protect the environment
Take used oil to an authorised collection point. Do not discharge into drains, soil or water.

Typical Physical Characteristics

ISO Viscosity Grade		ISO 3448	68
Density at 15°C	kg/m^3	ISO 12185	865
Flash Point COC	°C	ISO 2592	260
Pour Point	°C	ISO 3016	-6
Kinematic Viscosity		ISO 3104	
at 40°C	mm^2/s		54.0
at 100°C	mm^2/s		8.20
Viscosity Index		ISO 2909	96
Neutralisation Value	mg KOH/g	ASTM D974	< 0.05
Water Content	%m/m	ISO 3733	< 0.1
Ash (Oxidation)	%m/m	ISO 6245	< 0.01
Carbon Residue (Conradson)	%m/m	ISO 10370	0.02
Copper Corrosion (3h/100°C)		ISO 2160	class 1
Coefficient of Thermal Expansion	per °C		0.0006

These characteristics are typical of current production. Whilst future production will conform to Shell's specification, variations in these characteristics may occur.