

Formerly Known As: **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.

DESIGNED TO MEET CHALLENGES

Performance, Features & 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 below.

- **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.

Main 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

Specifications, Approvals & Recommendations

- Classified under ISO 6743-12 Family Q

- Meets DIN 51522 requirements

For a full listing of equipment approvals and recommendations, please consult your local Shell Technical Helpdesk.

Typical Physical Characteristics

Properties	Method	Heat Transfer Oil S2 X
ISO Viscosity Grade	ISO 3448	68
density @15°C kg/m ³	ISO 12185	865
Flash Point (COC) °C	ISO 2592	260
Pour Point °C	ISO 3016	-6
Kinematic Viscosity @40°C mm ² /s	ISO 3104	54.0
Kinematic Viscosity @100°C mm ² /s	ISO 3104	8.20
Viscosity Index	ISO 2909	96
Neutralization Value mg KOH/g	ASTM D974	<0.05

Properties		Method	Heat Transfer Oil S2 X
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 (3 hrs)	@100°C	ISO 2160	Class 1
Coefficient of Thermal Expansion	per °C		0.0006

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

Health, Safety & Environment

• Health and Safety

Shell Heat Transfer Oil S2 X is unlikely to present any significant health or safety hazard when properly used in the recommended application and good standards of personal hygiene are maintained.

Avoid contact with skin. Use impervious gloves with used oil. After skin contact, wash immediately with soap and water.

Guidance on Health and Safety is available on the appropriate Safety Data Sheet, which can be obtained from <http://www.epc.shell.com>

• Protect the Environment

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

Additional Information

• 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 here may be obtained from your Shell representative.