

## **ILEXAN<sup>®</sup> PSA Additive with Power Solvency Action**

### **Description**

ILEXAN PSA Additive exhibits exceptional solvency for the hydrocarbon structures found in most petroleum heat transfer oils and synthetic, organic heat transfer fluids. Its very low viscosity and pour point, relatively high boiling point, and superior thermal stability make ILEXAN PSA Additive ideal for use with heat transfer oils and fluids, particularly when they are thermally or oxidatively degraded. Its amazing **Power Solvency Action** provides a dramatic reduction in the viscosity of fresh and used heat transfer media while solubilizing any hydrocarbon oligomeric sludges and deposits in heat transfer systems.

Use of ILEXAN PSA Additive at levels as low as 5% can provide **Power Solvency Action** for problem solving:

- System pre-cleaning while operating before change out - reduces downtime and post discharge cleaning
- Flushing fluids not needed and in most cases, mechanical cleaning - less downtime and disposal cost
- Reduces viscosity - improves heat transfer efficiency while operating and thoroughness of change out discharge
- Use-life extender - degraded hydrocarbons solubilized extending the run length until scheduled change out

### **Applications**

ILEXAN PSA Additive can be used in many industrial indirect heating and cooling processes where low viscosity and high solvency are important for heat transfer system pre-cleaning before change out or extending the useful life of the charge. It is particularly beneficial as a solution additive to systems where thermally or oxidatively degraded hydrocarbon oligomeric sludges and deposits exist. All these applications for **Power Solvency Action** lead to lower cost in problem solving.

Changing to the suitable MARLOTHERM<sup>®</sup> Heat Transfer Fluid for the application once the immediate **Power Solvency Action** task is completed can minimize future degradation problems.

### **Operating Considerations**

At low addition levels to a problem charge, ILEXAN PSA Additive has little effect on the heat transfer system's vapor pressure. If the current charge has a boiling point higher than that of ILEXAN PSA Additive, 280 °C (536 °F), however, it is advisable to increase the inert gas blanket pressure sufficiently to keep ILEXAN PSA Additive in a liquid state and prevent its vapors from venting from the expansion vessel. **Power Solvency Action** requires that it remain in the bulk liquid phase of the heat transfer system.

ILEXAN PSA Additive's thermal stress resistance is excellent and improves the overall thermal stability of the most hot oil or fluid charges. The improvement achieved depends on the amount added.

Cleaning pump filter screens and by-pass filters is usually required to catch particles already in the heat transfer system as well as any new materials that are slow to solubilize during the initial period of **Power Solvency Action**. ILEXAN PSA Additive does not form any viscous or solid deposits that lead to fouling on heat exchanger surfaces or clogging of the heat transfer circuit. It is used to correct these types of problems.

The design of the heat transfer system, the expected operating conditions and the desired results should be reviewed with Sasol's MARLOTHERM Technical Service Department or its representative to ensure that it is a proper application for ILEXAN PSA Additive and **Power Solvency Action**.

### **Materials Compatibility**

ILEXAN PSA Additive is non-corrosive to metals typically used in heat transfer system construction. For flange connections where welded joints are not feasible, II-0 quality or fluorinated elastomer gaskets can be used in moderate temperature ranges to about 230 °C (440 °F). At higher heat loadings, and in particular where the circuit temperatures are widely cycled, metal-insert reinforced graphite gaskets are used successfully to ensure heat transfer system integrity. The gasket manufacturer's recommendations should guide the selection of the proper sealing material. See the MARLOTHERM Manual - *The Design of Heat Transfer Systems for Plants and Processes* for more details.

### Typical Physical and Chemical Properties

ILEXAN<sup>®</sup> PSA Additive is a clear aromatic liquid with a distinctive odor.

Property	Value	Unit	Test Method
Boiling range at 1013 mbar	ca. 278-282 (532-540)	°C (°F)	ASTM D 1078
Pour point	-30 (-22)	°C (°F)	ASTM D 97
Density at 20 °C	996 (8.3)	kg/m <sup>3</sup> (lbs/gal)	ASTM D3505
Kinematic viscosity at 20 °C	4	cSt	ASTM D 445
Flash point	ca. 130 (266)	°C (°F)	ASTM D 93
Ignition temperature	ca. 450 (842)	°C (°F)	ASTM E 659
Permissible heater outlet temperature	350 (662)	°C (°F)	-
Permissible film temperature	380 (716)	°C (°F)	-
Pumpability limit	-30 (-22)	°C (°F)	-

### Fluid Selection Criteria

ILEXAN PSA Additive stands out as a problem solver because of its **Power Solvency Action**, thermal stability to 350 °C (662 °F), fluidity over the use range (no special heat tracing required), and pumpable to -30 °C (-22 °F). Other features and benefits include:

Good heat transport and transfer properties	Improves heat transfer efficiency
Non-corrosive to materials of construction	Applicable for many systems
Generally stable with user side products	Applicable for many systems
High flash point and autoignition temperatures	Does not readily ignite
Low sensitivity to oxidation	Long-term performance
Minimal regulatory constraints	Not a hazardous substance or controlled product
Works while the system operates	Economical problem solver

### Safety, Handling and Disposal

ILEXAN PSA Additive can be stored virtually indefinitely in sealed steel containers and no special safety precautions are required during storage. Normal care in handling should be practiced to avoid bodily contact when transferring fluid to the circuit from drums or bulk modes of transportation and when performing heat transfer system maintenance. Care should be taken so the fluid cannot enter the soil or the sewer system. Fire hazard is slight due to the high flash point. ILEXAN PSA Additive should be kept away from open flames; foams and dry chemicals is effective fire fighting agents. ILEXAN PSA Additive can be disposed of or reclaimed under EPA used oil regulations found in 40 CFR 279.

*The safety and handling data contained herein are for general information purposes only. Please refer to the Sasol North America Inc. Material Safety Data Sheet for specific, complete information regarding the safety and handling of this product.*

### Availability and Service

Sasol offers a comprehensive range of high performance heat transfer fluids under the MARLOTHERM<sup>®</sup> and ILEXAN trade names. The MARLOTHERM products cover the temperature range from -80 to 360 °C (-112 to 680 °F). ILEXAN products are for special applications. Detailed information is available on request. Sasol has more than 40 years of experience in the field of heat transfer technology. This know-how is available to you, should you as our customer have any questions or problems. Whether you have questions about the choice of a heat transfer medium, system design, troubleshooting, safety issues or specification problems, our experts are here to help you. Just contact us!

## **Sasol Contacts**

For more information on MARLOTHERM<sup>®</sup> Heat Transfer Fluids and ILEXAN<sup>®</sup> PSA Additive, go to <http://www.marlotherm.com> on the Internet or

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