

JARYTHERM® FOR CHEMICAL AND PHARMA PROCESSES



Building on its unique set of expertise in materials science, Arkema designs materials to address the ever-growing demand for innovative and sustainable materials, driven by the challenges of new energies, new technologies, the depletion of resources, mobility, and increasing urbanization.

Arkema is a world player in the field of specialty chemicals and among these different chemical solutions, Arkema produces aromatics based fluids with extensive benefits when used as heat transfer fluids in the chemical and pharmaceutical industries.

APPLICATIONS IN CHEMICAL AND PHARMA PROCESSES

Chemical and pharmaceutical unit operations require a precise temperature control for heat supply (heating mode) and/or for heat removal (cooling mode).

Beyond the main reaction step, some purification steps such as **distillation** or **fractionation** are often controlled using high temperature heat transfer fluids, operating at about 300°C / 570°F in the case of oleochemicals for example.

For **pharmaceutical applications**, the use of a single fluid both for heating and cooling (quenching operations) offers a real benefit that is perfectly met by Jarytherm® fluids.

The **wood** panel and medium density fiberboard (MDF) production requires heating temperature in the range 200-300°C (400-570°F). The non-flammability of Jarytherm® guarantees a high safety level and is though a material of choice for this type of industry.

Despite the fact that **Asphalt** (Bitumen) production is not exceeding 230°C (450°F), it is a market where Jarytherm® fluids bring high value thanks to their durability.

Chemical processes
Specialty chemicals
Oleochemicals
Coating resins
Adhesives

Industrial applications
Pharmaceuticals
Wood panels
Bitumen
Metal processing

Examples of chemical or industrial steps requiring the use of HTF

Batch Processing

Continuous Processing

Transport and Storage





WHAT IS JARYTHERM® USED FOR?

The primary purpose of using transfer fluids in a system is to transfer heat from your boiler to the equipment where a well-controlled and constant temperature is needed.

Arkema due to its history has a long experience with heat transfer fluids operating in the range of 200 to 350°C (400 to 575°F).

GOOD REASONS TO SELECT JARYTHERM®

- Reduced CAPEX** Low pressure requirement: High fluid boiling point
Standard material use: Non-corrosive toward carbon steel
- Optimized OPEX** Efficient heat transfer: High calorific power
Long fluid ageing life: High thermal stability
Low maintenance: Limited fouling thanks to high heavies solubility
Low energy consumption: Low fluid viscosity over temperature range
- Process Safety** Non fire risks: High flash point
Limited top up: Low formation of light impurities even at high process temperature

HOW TO MAINTAIN THE BEST QUALITY OF JARYTHERM® IN YOUR PROCESS?

All units using heat transfer fluids should operate using a proactive maintenance plan. Arkema is there to recommend solutions which encompass regular system analysis and fluid management (top-up, flash point control ...).

Arkema also provides regular technical service to its customers. Arkema gives advice on the right fluid selection versus expected life time. Arkema has also developed partnerships with boiler manufacturers and EPC for the best assistance.

ARKEMA JARYTHERM® PRODUCT RANGE

Arkema has manufactured and commercialized Jarytherm® products for decades. They are synthetic aromatic based and made on purpose with a stable composition over years.



Characteristics	Jarytherm® BT06	Jarytherm® DBT
High boiling point/ ignition point	✓✓	✓✓✓
Low pour point and viscosity	✓✓✓	✓✓
Good thermal stability	✓✓✓	✓✓
Good heat transfer properties	✓✓✓	✓✓✓
Non-corrosive to materials	✓✓✓	✓✓✓
High flash point & auto-ignition temperature	✓✓	✓✓✓

JARYTHERM® PROGRAM

Arkema proposes different programs according to customer's requirements. We guarantee a long and cost effective heat transfer fluid use in your equipment. Our customer designed programs range from product supply to full fluid management.

For more details please contact us through our website (www.arkema.com).

JARYTHERM® ANALYTICAL SERVICE

Arkema provides analyses of the Jarytherm® fluid in-use.

This allows end-users to operate in safe conditions and maximize fluid lifetime.

The analyses give a clear view on the fluid ageing. Based on the results, the operating conditions and the history of the circuit, Arkema provides technical recommendations.

Characteristics	Standard method
Gas Chromatography	<i>Internal method</i>
Low boiling components %	
Jarytherm® fraction %	
High boiling components %	
Viscosity at 20°C (cSt)	ASTM D445
Flash point (open cup) °C	ASTM D92
Acidity (meq H⁺ /100 g)	ASTM D664
Water content (ppm)	ASTM D6304
Insoluble materials (ppm)	-



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