PHARMACEUTICAL CASE STUDY

Heating Organic Solvents with Sanitary Shell & Tube Heat Exchanger

Exergy's Model 02626 (73 Series) delivered a compact, compliant, and high-performance solution for a demanding pharmaceutical heating application — safely bringing organic solvents from **20 °C to 70 °C** using silicone oil at 100 °C.

The Challenge

The customer needed to heat organic solvents from 20 °C to 70 °C using silicone oil at 100 °C. Key constraints included:

- **60 bar** pressure limit on the cold side
- **5 bar** pressure limit on the hot side
- Full compliance with **sanitary design standards**
- Compact footprint to fit within existing facility layout

The Solution

Exergy supplied a **316L Stainless Steel Sanitary Shell & Tube Heat Exchanger** — Model 02626, 73 Series — engineered to meet every requirement:

- Double tube sheet for enhanced safety
- Compact **3.00" shell diameter**, 26" tube length
- **16.16 ft²** of heat transfer area
- Sanitary design meeting regulatory standards

20→70

°C Temperature Rise

Organic solvent heated reliably from ambient to process temperature

60

Bar Cold Side

Maximum pressure safely maintained on the solvent side

5

Bar Hot Side

Strict silicone oil pressure constraint met by design

16.16

ft² Heat Transfer

Efficient thermal area packed into a compact 3" shell

Reliable Performance

Achieved the full 50 °C temperature rise consistently, ensuring uninterrupted pharmaceutical process heating.

Regulatory Compliance

Sanitary design met all applicable pharmaceutical industry standards, supporting GMP-compliant operations.

Seamless Integration

Compact footprint allowed drop-in installation with no additional floor space or facility modifications required.

> "Exergy's heat exchanger not only met our stringent pressure and temperature requirements but also provided the sanitary compliance that was needed. Its compact size made installation seamless."

Conclusion: The Exergy Model 02626 (73 Series) 316L Stainless Steel Sanitary Shell & Tube Heat Exchanger proved to be the ideal solution combining precise thermal performance, dual-pressure safety, sanitary compliance, and a compact design for pharmaceutical solvent heating applications.