

# CHEMICAL BULK STORAGE HEATERS FOR UTILITY APPLICATIONS

## DATA & SPECIFICATION SHEET

### General Description and Benefits

**Inditherm bulk storage heating** uses a revolutionary system for heating products so that they remain liquid and avoid spoiling. They use Inditherm's patented, low voltage, carbon polymer technology (CPT) to provide the heating.

There are two construction alternatives: removable, flexible heated and insulated jackets or heated pads covered with conventional insulation and cladding.

Many materials become viscous or even solidify at ambient temperature, notably chemicals such as Caustic. Heating is therefore essential to keep them flowing. However, conventional heating of tanks using immersion heaters or electrical trace heating present a number of problems for users.

#### The challenges of using conventional heating solutions include the following:

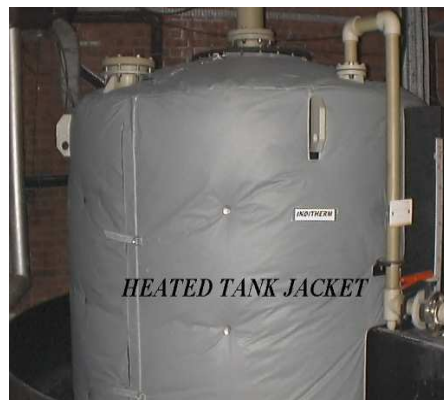
- Immersion heaters do not provide even heating, and wet and windy weather can result in very uneven temperature distribution on exterior tanks, leading to possible crystallisation under cold surfaces.
- Temperature distribution in the tank can be uneven with electrical trace heating, with hot and cold spots and potential burning of the product or the tank itself in the vicinity of the trace.
- Power consumption is high and there are inherent health & safety risks associated with mains voltage systems.
- Precise temperature control is technically challenging.

#### Using Inditherm CPT to heat tanks solves these problems:

- Although the Inditherm pads do not cover the entire tank, the flat profile enables a lower transfer temperature than electrical alternatives, avoiding the danger of burning.
- The Inditherm control system, along with insulation, allows the contents of tanks to be controlled to within  $\pm 2^{\circ}\text{C}$ , whatever the ambient conditions. Users can vary tank temperatures, as required, allowing tank content changes, thereby reducing capital cost.
- Inditherm's low voltage system is inherently safe and uses a fraction of the energy of alternative systems – typically less than 30%, thereby reducing operating costs.
- Inditherm offers a variety of cladding options, enabling tanks to be located outside, thereby avoiding expensive building works and lengthy planning approvals.



**Figure 1 - Tank Heater under Conventional Cladding**



**Figure 2 – Removable, Bespoke Jacket Heater on Caustic Tank**

## Typical Configurations

Inditherm pads are placed around the tank in bands in such a way as to transfer heat into the contents in the most efficient manner. Two typical configurations are shown in Figure 3 below. The option of fixed or removable covers and fixed cladding options give users complete flexibility in their use of bulk storage tanks.

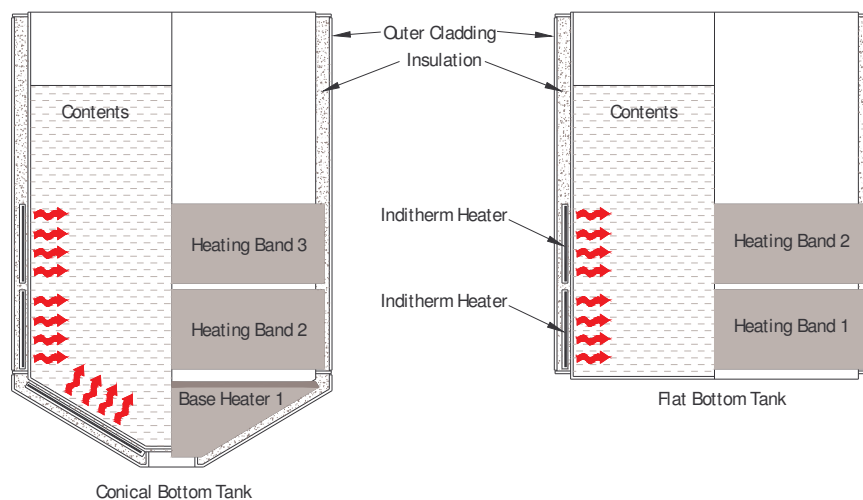


Figure 3 – Typical Inditherm Heating Configurations for Bulk Storage

## Specification

<b>Tank Type:</b>	Metal or plastic tanks up to virtually any size
<b>Applications:</b>	Heating, frost protection, process control
<b>Inditherm Output:</b>	Depends upon tank type, size and contents
<b>Mains Voltage:</b>	115 / 230 / 415 Vac 50Hz
<b>Control Panel:</b>	IP55 rated enclosure; rating depends upon application
<b>Transformer Voltage:</b>	24Vac to 36 Vac
<b>Heating Sections:</b>	Inditherm pads positioned in bands to heat the tank contents in the most efficient manner
<b>Insulation:</b>	As required, from 25mm to 100mm in a variety of materials
<b>Cladding Material:</b>	Aluminium, stainless steel or Plastisol cladding, as required
<b>Removable Jackets:</b>	Heating sections with insulation and enclosed in reinforced chemical & water resistant covers, secured by removable straps
<b>Temperature Control:</b>	PID thermostat control to $\pm 2^{\circ}\text{C}$
<b>Temp/Current Protection:</b>	Internal thermal fuse

## Inditherm Conductive Polymer Technology

Inditherm technology is based on a unique carbon-based polymer that generates uniform heat across its entire surface when energised by a low voltage power source.

The Inditherm CPT has fabric-like qualities and flexibility that enable it to be used to heat many industrial processes, including items with shapes that are normally difficult to heat. In addition, it is ideal for heating large, flat areas.

**Contact:** Inditherm Industrial, Houndhill Park, Bolton Road, Rotherham S63 7LG, United Kingdom  
 Tel: +44 (0) 1709 761000; Fax: +44 (0) 1709 761066  
 E-mail: [sales@indithermplc.com](mailto:sales@indithermplc.com) ; Website: [www.inditherm.com](http://www.inditherm.com)