



## **THE ULTIMATE PROTECTION**

Superior tank coatings for the widest possible range of liquid cargoes

**HEMPEL**

# No buts. No maybes. No compromises. Just the best

*"This product has more than fifteen years track record with excellent global performance and is rated the best phenolic epoxy tank coating in the market today. In Korea we have coated the tanks of more than 100 vessels with HEMPADUR 15500 without a single claim."*

Michael Aamodt, Group Marine Product Manager

## Formulated to meet individual demands

A tank coating serves two purposes – namely protecting your cargo as well as your tank. We offer various solutions depending on whether

your liquid cargo is edible oil or aggressive chemicals – or both. In order to meet the market demand for versatile solutions,

we offer three different products – depending on the cargo and your needs.

### CHEMICALS & SOLVENTS

GALVOSIL 45700 - ZINC SILICATE

### WHITE OIL PRODUCTS

HEMPADUR 15400 - EPOXY

### CRUDE OIL

### VEGETABLE OILS

## Superior Solutions

At Hempel we have a long and proud tradition for going for the ultimate and for the best. We will not settle for anything but superior solutions. This means reliable and versatile tank coatings that meet the following requirements:

- Maximum chemical resistance to aggressive cargoes
- Low cargo absorption and retention
- Fast post curing procedures
- Maximum corrosion protection
- Approved by FDA for carriage of edible cargoes
- Long service life with minimal maintenance
- Well proven with excellent track records\*
- FROSIO certified professional worldwide technical support
- Extensive easy-to-use online Cargo Protection Guide

\* Extensive tank coating applications lists to be found on [www.hempel.com](http://www.hempel.com)

## Reliable and professional assistance

Correct application of coatings in cargo tanks is far more difficult than most other coating operations. To ensure correct application and result, every process must be carried out properly and professionally, including:

- Choice of coating system
- Planning and work scheduling
- Staging and surface preparation
- Ventilation and dehumidification
- Paint application and inspections
- Seawater testing and final touch-up

Our well educated Hempel Technical Service with global coating inspectors and coating advisors look forward to working with you in order to ensure you optimize your tank coatings.



# High standards. Versatile solutions. Ultimate protection.

## HEMPADUR 15500, PHENOLIC EPOXY

- Ultimate protection with widest possible resistance

HEMPADUR 15500 is an ultra high performance phenolic epoxy tank coating with the widest resistance to aggressive cargoes carried in chemical tankers. It is the optimal solution when the highest possible

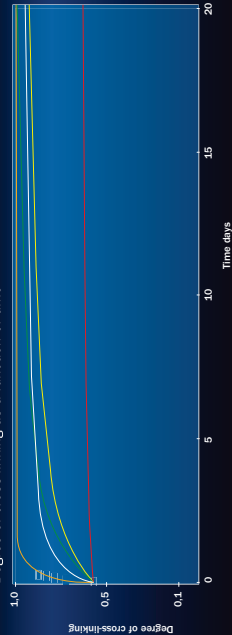
resistance and a close sequence of cargoes are required.

It is also extensively used by operators opting for the flexibility to carry a wide number of cargoes

offered by the very broad resistance provided.

This coating has FDA approval for carriage of dry and wet foodstuffs.

Degree of cross-linking as a function of time



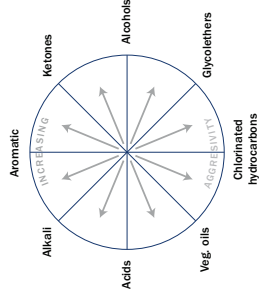
■ 45°C in seawater  
■ 60°C in vegetable oil  
■ 60°C in condensing water  
■ 25°C in diesel oil

### Superior cross-linking

HEMPADUR 15500 has excellent resistance to a wide range of chemicals and products. To obtain the highest degree of cross-linking and chemical resistance towards the most aggressive chemicals and products, the resistance profile can be further extended by a so-called "post cure".

### Post curing procedures

The post curing of HEMPADUR 15500 takes place at increased temperatures and can take two different routes, each with its own benefits. Carrying a hot cargo at temperatures above 50-60°C/122-140°F for about a week combines the post curing with a no-cost, no-Idle-time of the vessel. Some owners prefer to use hot fresh water to achieve post curing, thus using less than a day to prepare the vessel for carrying the most aggressive cargoes. Various post curing procedures are illustrated in the figure above.



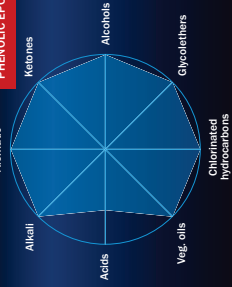
## HEMPADUR 15400, EPOXY

- A true workhorse for bulk oil cargoes

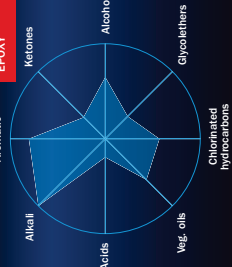
HEMPADUR 15400 is an amine epoxy tank coating for bulk oil cargoes. It is the ideal choice when moving oil and oil products, fats, certain fertilisers and caustic soda.

This coating has FDA approval for carriage of dry and wet foodstuffs.

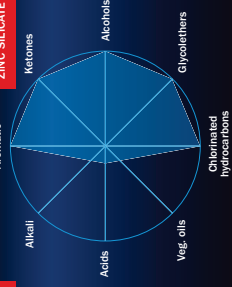
### PHENOLIC EPOXY



### EPOXY



### ZINC SILICATE



## HEMPEL'S GALVOSIL 15700, ZINC SILICATE

- The obvious choice for organic chemical cargoes

HEMPEL'S GALVOSIL 15700 is a zinc silicate based tank coating where the cured film is purely inorganic. The product has outstanding chemical resistance to organic chemicals

within the pH range 6-9. It is fully resistant to strong solvents and it generally allows a close sequence of cargoes.

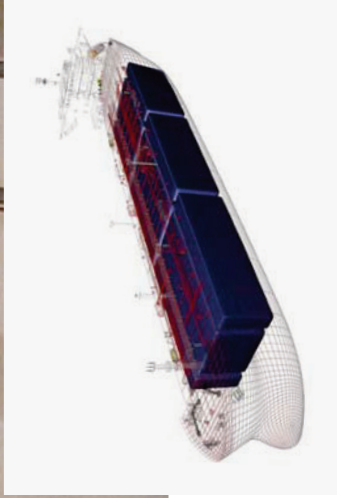
This coating has FDA approval for carriage of dry and wet foodstuffs.

## Resistance of Hempel's tank coatings

Product	Hempadur 15500		Hempadur 15400		Galvosil 15700	
	Phenolic epoxy		Epoxy		Zinc silicate	
BIG MOVERS*	Crude oil	■	■	■	■	■
	Gasoline	■	■	■	■	■
	Palm oil	■	■	■	■	■
	Methanol	■	■	■	■	■
	Soybean oil	■	■	■	■	■
	Molasses	■	■	■	■	■
	Styrene monomer	■	■	■	■	■
	Xylene	■	■	■	■	■
	Sulphuric acid	■	■	■	■	■
	Ethylene glycol	■	■	■	■	■
	MTBE	■	■	■	■	■
	Ethylene dichloride	■	■	■	■	■
	Sunflower oil	■	■	■	■	■
	Benzene	■	■	■	■	■
	Urea ammonium nitrate	■	■	■	■	■
	Acetone	■	■	■	■	■
	Ammonia solution, 28%	■	■	■	■	■
AGGRESSIVE CHEMICALS	Butyl ether	■	■	■	■	■
	Caustic soda, 50%	■	■	■	■	■
	EDC	■	■	■	■	■
	Fatty acid	■	■	■	■	■
	Heptanoic acid	■	■	■	■	■
	Methylene Chloride	■	■	■	■	■
	Methyl Ethyl Ketone	■	■	■	■	■
	Potassium Hydroxide, 50%	■	■	■	■	■
	Toluene	■	■	■	■	■
	Trichloroethylene	■	■	■	■	■
VAM	■	■	■	■	■	

■ Resistant

\* Extract from INTERTANKO



## Easy-to-use Online Cargo Protection Guide

Hempel has 50 years of experience with research and development in tank coatings, and we take great pride in sharing this know-how with you via our online Cargo Protection Guide.

The database will help you select the correct and most cost-effective tank coating based on type of cargo, resistance requirements, MARPOL pollution category and type of ship.

You will find our Cargo Protection Guide on our webpage: [www.hempel.com](http://www.hempel.com)

The Cargo Protection Guide provides the chemical resistance list, containing formula, cargo name,

UN Number, MARPOL category and ship type, as a printable PDF report for your convenience.

## **HEMPEL** **worldwide support**

When you choose HEMPEL, you choose the security of a global company, who has been in the marine coating business since 1915. We offer worldwide support with our technical service and coating inspectors present in more than 80 countries. We want to make sure that you receive the best possible assistance both before and after choosing Hempel's tank coatings.

### **THE HEMPEL GROUP HEAD OFFICE**

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