



**JOTUN**

# Tankguard

## Marine Tank Coatings



# Understanding the tank

*Helping you protect your investment*

## Bringing simplicity and flexibility to a complex business

Tank coatings must serve a dual purpose – firstly to protect the cargo being carried against contamination and secondly to protect the substrate of the tank against corrosive elements. The tank coating must provide resistance to the diverse and constantly changing nature of the products being transported.

Selection of the best coating for a customer's individual transporting needs entails choosing either a tank coating that will be resistant to the broadest range of cargoes or one that is specific to a clearly defined cargo or group of cargoes.

Jotun tank coatings provide solutions to this wide and complex field. Jotun's special expertise in the science and technology of corrosion protection, gained over 80 years, has been the valuable basis for its tank coatings.

## Products cover the spectrum

Products designed within three generic types of coating cover the spectrum of coatings for the transport of oil and chemical products.

The Jotun range of tank coatings represents innovative products each developed to meet the challenges of protection against corrosion and contamination, combining world proven performance with unrivalled service, support and advice.

## MARPOL – the new rules

As a result of the introduction of the MARPOL rules, many cargoes which earlier have been carried in the standard clean product fleet, now have to be carried in chemical tankers. This restriction includes methanol, MTBE and even vegetable oils.

## The consequences

The consequences of the MARPOL rules will include a shortage of tonnage for carrying these upgraded products, a greater awareness of the products allowed in clean product carriers and a revision of charter agreements.

Generic type	Jotun tank coating
Epoxy phenolic	Tankguard Special Ultra Tankguard Special
Epoxy	Tankguard HB Tankguard CPC
Zinc silicate	Tankguard Zinc

For specific chemical resistance requirements other technologies are also available e.g. vinyl ester technology in Chemflake Special.



# *operators' special needs*

## *nt, your cargoes and your schedules*

Existing newbuilding contracts together with all new contracts should be reviewed to ensure the design conforms to the intended or potential trade pattern and is not limited as the result of an oversight.

It is important to continue to update the training of staff to ensure a complete understanding of the type of coatings that are most suitable for a particular cargo trade. The Jotun Onboard Maintenance Manual (OMM) is available and will provide valuable assistance.

### *Coating choice*

There is a choice when selecting the best coating for a customer's individual transportation needs. This will be between either a tank coating that will be resistant to the

broadest range of cargoes or one that is specific to that cargo. A clear business decision of how the vessel will trade should be the basis for the coating choice. In this very sophisticated and professional market, the generic type of coating needed will have already been determined before discussions are held with the paint supplier.

### *Example*

A high value cargo such as methanol may be contracted for a certain period of time with short frequent voyages. In this case it is clear that the best and most effective coating should be a zinc silicate. It offers quick recovery and easier turn around than with an epoxy type coating.

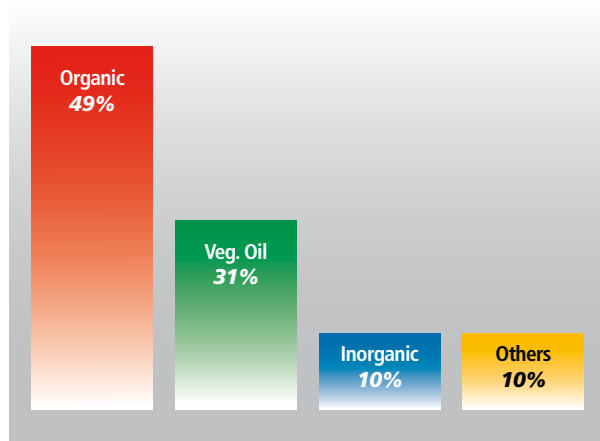
# Choosing the optim

## Simple guidelines to achieving optim

### A coating for every cargo

The number and types of cargoes traded today are huge, placing widely differing requirements on speciality coatings. Jotun provides coating systems that meet the majority of those needs. An easy to use reference to the rules for coating treatment of tanks prior to carrying the next cargo is Jotun's Product Resistance List - easily accessible on [www.jotun.com](http://www.jotun.com)

### Influencing factors



*Inorganic are best solved with stainless steel tanks.  
Vegetable oils can be carried in the Tankguard products.  
Organic and others will be according to the Product Resistance List on [www.jotun.com](http://www.jotun.com)*

EXAMPLE 1*		
Type of coating:	Zinc Silicate	
Jotun product:	Tankguard Zinc	
Typical cargoes:	Acetone	Ethanol
	Acrylonitril	Methanol
	Butanol	Phenol
	EDC	Styrene

# um Tank Coating

um solutions to complex needs

## Value of the cargo

The true value of a vessel lies in its cargo tanks and ability to trade efficiently with different cargoes.

Rejected cargoes and the need for recoating tanks are time consuming and costly. It is therefore critical that when changing cargoes the subsequent cargo is not

### EXAMPLE\*2:

Type of coating: Epoxy  
Jotun product: Tankguard HB

Typical cargoes:	Aviation fuel	Ethylene glycol
	Biodiesel	Lubes
	Caustic soda	Molasses
	ETBE	MTBE
	Ethanol	Urea

### EXAMPLE 3\*

Type of coating: Phenolic Epoxy  
Jotun product: Tankguard Special Ultra

Typical cargoes:	Benzene	Palm oil
	Biodiesel	Soyabean oil
	Caustic soda	Sunflower oil
	Coconut oil	Tallow
	Ethylene glycol	Toluene
	FFA	Urea ammonium
	Methanol	Nitrate solution
	MTPC	Xylene

*Three typical examples of tank coating solutions.*

*\* Guidelines only are given. For actual resistance, please refer to the current Product Resistance List on: [www.jotun.com](http://www.jotun.com).*

# Recommended

*Providing quick, effective and econ*

## Tankguard Zinc

Two-pack, moisture curing, ethyl silicate based zinc-rich coating

- Excellent mud cracking resistance
  - Easy application, flexible process
  - Smoother surface after application – no sanding required
  - Re-coatable
  - Easy cleaning between cargoes
- On request: water-borne version available

## Tankguard CPC

Quality epoxy tank coating for special usage

- Smooth surface after application
- Easy cleaning between cargoes
- Dedicated tank coating for clean petroleum products

## Tankguard HB

High quality epoxy tank coating

- Smooth surface after application
- Easy cleaning between cargoes
- Wide chemical cargo flexibility

A coating fo

# Tank Coatings

*omical solutions to specific needs*

## Tankguard Special

Excellent epoxy phenolic tank coating

- Smooth surface after application
- Easy cleaning between cargoes
- Designed for product carriers and chemical carriers
- Excellent chemical resistance

## Tankguard Special Ultra

Superior epoxy phenolic tank coating

- Smooth surface after application favouring easy cleaning between cargoes
- Shortened recovery time between cargoes
- Allows application at temperatures down to 5°C
- Superior chemical resistance

r every cargo

# People, product

*Dedicated to ensuring optimum tank coating*

## Here's how we can help

From our very beginnings in 1926, Jotun has focused on the needs of marine customers and our quality protection systems are greatly appreciated. This experience has enabled us to develop the latest cutting-edge products designed to meet the exacting needs of our customers with proven products conforming to the required standards, rules and regulations.

In the area of tank protection, at Jotun we have focused on such issues as the new MARPOL rules and other specific matters related to the needs of these customers to ensure compliance whilst providing economic and effective coating solutions.

*71 Jotun companies on all continents*

Jotun is a leader in marine coatings with a world class reputation for teamwork, quality, reliability and friendliness. It provides its customers with responsible and effective global technical advice and back-up service combined with a commitment to stretch forward to reach the boundaries of people and product performance.

*40 production facilities globally*

*More than 6,300 employees*

*Worldwide service and support*



# s and resources

ng solutions, compliance and much more

## A world of experience

Jotun has 5 decades of unrivalled experience in protecting more than 15,000 vessels. Our products are proven in every sea in the world, on every part of any vessel and in any trade.

## Innovative research and development

Jotun's group research and development centre in Sandefjord, Norway heads up our R&D laboratories in United Arab Emirates, Malaysia, South Korea, USA and China. More than 200 experienced chemists strive to find improved solutions and innovations in the paint and coating industry. Thus we have a strong basis to support our customers – meeting their needs whether in a general practical way or assisting to meet rules and regulations.

## A world proven product range

The Jotun tank coatings range is designed to minimise down-time, saving time and cost whilst providing protection against corrosive elements and cargo contamination. The products meet legislation, provide safe working practices and have proven in-service across the world.



## On-site Coating Advisors for technical support and supervision

Jotun Coating Advisors are a valuable resource when it comes to simply doing the job right. They are highly trained, most with formal related qualifications and are a team second to none. Special focus on the inspection demands of the coating performance standard has been given to our coating advisors to ensure that we together can comply.

FROSIO, NACE or similar accredited coatings inspectors are readily available wherever a vessel is built or drydocked.



# ***Keeping up to date***

## *5 most frequently asked questions*

Q1. Does Jotun have tank coating systems to carry the most common chemicals in today's market?

A1. Yes, with Tankguard Special Ultra Jotun has a versatile tank coating system with superior resistance to chemicals like MTBE, BTX (benzene, toluene and xylene), methanol, ethanol, urea, caustics, ethylene glycols.

Q2. What are the additional benefits Jotun offers with their products?

A2. Jotun's tank coating systems enables easier cleaning and shorter recovery time between cargoes thanks to their smoother surface and sustaining hardness.

You have the added benefit of strong technical supervision from our tank coating technical team, ensuring security during application period.

Q3. Does Jotun have products that cover all the products listed in Chapters 17 & 18 of the IBC Code?

A3. Yes, Jotun provides coatings that cover most of the products listed in the IBC code.

Q4. How do we choose between pure epoxies, phenolic epoxies or zinc silicate coatings?

A4. This depends upon the typical cargoes expected to be carried. A comprehensive product resistance list for all our tank coating products can be found on the web-site [www.jotun.com](http://www.jotun.com).

Further assistance can be obtained by contacting Jotun - please find contact information on subsequent pages.

Q5. Where are Jotun's products and services available?

A5. Jotun's tank coating products are readily available in all common areas where applications are being executed .

*If you have further questions  
regarding tank coatings and/or  
chemical resistance please email:  
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or contact your local Jotun office*

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