Global Marine Tank Lining Chart

CHEMICAL CARGO SERVICE

Product	Type	ACIDS					ALKALIS		SOLVENTS								MISCELLANEOUS								
		Acrylic acid	Cupric Acid	Hydrofluorosilicic Acid	25% Citric Acid	Fatty Acid	Sodium Hydroxide 50%	Sodium Hydroxide 10%	Toluene or Xylene	Ethanol	Fuel-grade ethanol	Gasoline, Unleaded	Gasoline, Blended	Jet Fuels	Methanol	Ketone solvens	Ethylene Glycol	Crude, Sour	Cumene	Urea solution	Oil, hydraulic / vegetable	Brine	Sewage, Brown Water	Water	DI Water, 50°C (122°F)
Phenoline 353	Modified Epoxy Novolac				✓	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Phenoline 385	High Solids Polyamine-Epoxy				✓		✓		✓	✓		✓	✓	✓			✓	✓		✓	✓	✓	✓	✓	✓
Plasite 4500 FS	100% Solids Solvent Free Epoxy				✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			✓	✓		✓	✓	✓	✓	✓	✓
Plasite 9060 LT	Modified Epoxy Novolac Low Temperature curing capability	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Carbozinc 11	Solvent Based Inorganic Zinc								✓	✓	✓	✓	✓	✓	✓	✓	✓		✓						

BALLAST TANK SERVICE

PRODUCT	IMO /ABS Type Approved	NSF/ANSI 61 for Potable Water
CM 18 BT	✓	
Carboguard 61		✓
Phenoline 341		✓
Carboguard 635	✓	✓
IMO /ABS Type approved for Performance Standard for Protective Coatings		
NSF/ANSI 61 for potable water, when used for potable water use potable water curing schedule		

Consult your Carboline Technical Representative for specific recommendation designed to meet your needs.

Notes:

****All Products acceptable up to 100°F or (38°C). Many products are acceptable at higher temperatures, please contact Carboline Technical Service Department to get a final tank lining recommendation.**

Use Carbozinc 11 HS in U. S. to be in compliance with NESHAP.

Carboline Marine Tank Lining Product Description

Carboguard 61	High solids, corrosion resistant epoxy polyamide lining approved NSF/ANSI Std. 61 for potable water. Carboguard 61 is designed for use in both new construction and maintenance as potable water lining for tanks, pipes and valves. This product has low odor, low VOC, low temperature cure 40°F (4.4°C) with excellent wetting properties resulting in good adhesion properties to all surfaces.
Carboguard 635	All purpose epoxy phenalkamine with a variety of attributes, low temperature cure 20°F (-7°C), surface tolerant; fast recoat times, moisture tolerant with excellent corrosion protection. NSF approved for potable water, in addition, it is approved by the IMO for Ballast Tanks.
Carbomastic 18 BT	Modified epoxy polyamide having outstanding resistance to salt and fresh water applications. It has been rigorously tested and meets the demands of IMO Performance Standard for Protective Coatings. It is classified "B1" (Superior Grade under DNV standard "Testing and classification of Ballast Tank Coatings"). It is also suitable as a rust preventive coatings for hull applications as well as ballast tanks.
Carbozinc 11	Solvent Based Inorganic Zinc time-tested corrosion resistant primer that protects tank steel galvanically in the harshest environments. For over five decades, Carbozinc 11 has been the industry standard for high-performance solvent based inorganic zinc lining protecting marine steel tanks worldwide in barges and ships. Carbozinc 11 meets United States Food and Drug Administration Regulations 21 CFR 175.390 and 175.300, (Gray).
Phenoline 341	This solvent free thick film epoxy has excellent resistance to a variety of marine cargos such as potable water, crude oil, fuel oils, and other exposures making it ideal as a lining system for Marine Tanks. It is applicator friendly, using conventional airless spray. It has excellent flexibility, impact resistance and corrosion protection for the marine environment.
Phenoline 353	Phenoline 353 is a highly cross-linked modified novolac epoxy lining with extraordinary overall chemical resistance and versatility. A unique blend of resins make it highly resistant to a variety of aggressive cargos like ethanol, gasoline, gasoline blends, biodiesel, fuel oils, and others. It can be used in both acidic and high temperature caustic exposures.
Phenoline 385	Phenoline 385 is a high performance, high solids, polyamide-epoxy lining that is recommended for a variety of petroleum products including 180°F (82°C) crude oil, Demineralized water 150°F (66°C), crude/water mixtures, gasohol, ethanol, fuel oil, jet fuel, biodiesel, and gasoline. It is also a good choice for wastewater and water exposures. The product is self-priming and is normally applied in two coats, and suitable for food-grade cargos. Phenoline 385 meets United States Food and Drug Administration Regulation 21 CFR 175.300.
Plasite 4500 FS	Plasite 4500 FS is a thick film one coat; solvent-free, fast-set, non-blushing epoxy tank lining formulated for quick-cure at low temperatures 35°F (2°C). This one coat lining is well suited for crude oil, gasoline, fuel blends and straight fuel-grade ethanol service. It has a broad range of chemical resistance including ballast tanks for marine service.
Plasite 9060 LT	Plasite 9060 LT modified novolac epoxy has extraordinary resistance to a wide range of chemicals including solvents, acids and alkalis. The low temperature 35°F (2°C) curing characteristic makes this lining unique given the breadth of its resistance properties. It has a unique blend of resins that make it highly resistant to a variety of aggressive cargos including ethanol, gasoline, gasoline blends, biodiesel, fuel oils, various acids, alkalis, and others. It is very well suited for lining all types of marine tanks.