PRODUCT INFORMATION
CHEMOLINE 12 FDA

PRODUCT DESCRIPTION
CHEMOLINE 12 FDA is a black soft rubber lining based on Chlorobutyl rubber (CIIR).

FIELDS OF APPLICATION
CHEMOLINE 12 FDA is developed specifically for the workshop rubber lining of chemically loaded steel components. The field of applications are water treatment facilities and the chemical industry. Some typical examples of applications are the rubber linings of water preparation vessels, storage tanks and agitated tanks, basins, pipe spools as well as various vessels in the phosphoric acid industry.

APPROVALS & CERTIFICATES
- Certificate of suitability for aqueous food in accordance with the guidelines CFR 21§ 177.2600 of the Food and Drug Administration (FDA)

FEATURES
- Strong resistance against mineral acids, bases and polar solvents
- Excellent diffusion resistance against gases like sulphur dioxide, nitrogen oxides, and saturated water vapour
- High insulation resistance
- Application onto steel components
- Workshop rubber lining

CHEMICAL RESISTANCE
Information on the chemical resistance properties is available upon request.

SUBSTRATE
Substrates are components made of non-ferrous metals, cast iron, non-alloyed or austenitic steel. Components to be rubber lined shall be designed and manufactured in accordance with EN 14879-1.

SURFACE PRE-TREATMENT
All surfaces to be rubber lined must be dry and free of contaminants. All contaminants, including non-visible detectable contaminants, must be removed in accordance with DIN TR 55684 or EN ISO 8502.
Non-alloyed steel surfaces shall be abrasive blasted to "Near White Metal" in accordance with EN ISO 12944-4. A surface preparation degree of SA 2½ (SSPC-SP 10; NACE No. 2) as specified in EN ISO 8501-1 and a “medium (G)” roughness degree as specified in EN ISO 8503-2 must be achieved. A minimum surface profile of $R_z \geq 50$ µm is required.
To prevent flash rust, the primer must be applied immediately after the blasting and cleaning of the substrate or the component must be air conditioned to a relative humidity of ≤ 40%.

ENVIRONMENTAL CONDITIONS
Throughout the rubber lining process, the temperatures of the substrate and rubber lining materials shall be maintained within the range specified by TIP TOP. All surfaces shall be maintained at a temperature at least 3K above the dew point in order to prevent condensation.

ADHESIVE SYSTEM
The **CHEMOLINE 12 FDA** is bonded onto steel components by using the two-coat primer system **PRIMER PR 500-1** & **PRIMER S 500-2** in combination with **ADHESIVE TC 5000**.

APPLICATION METHOD AND CONSUMPTION
During the application of the product, the application instruction must always be observed.

Coat	Product	Application Method	Coverage [g/m²]
1. Coat steel	**PRIMER PR 500-1**	Roll / Spray	ca. 150
2. Coat steel	**PRIMER S 500-2**	Brush	ca. 125
3. Coat steel	**ADHESIVE TC 5000**	Roll	ca. 150
4. Coat steel	**ADHESIVE TC 5000**	Brush	ca. 150
1. Coat rubber	**ADHESIVE TC 5000**	Brush	ca. 150

CLEANING
Clean all equipment with **SOLVENT CF-CE** immediately after use.

VULCANISATION
The details given in the application instruction must be observed during vulcanisation.

Place	Vulcanisation Method
Workshop	Vulcanisation in an autoclave under pressure by means hot air or steam.

SPARK TEST
The spark test (holiday test) of new rubber linings is carried out according EN 14879-4 by using a high voltage tester. For carrying out the spark test, only the high voltage testers of Elmed model Isotest IIRT, Isotest 3P or Isotest Inspect 35 as well as the test pistols of Wegener model WEG 20, WEG 22 or WEG 100 are allowed.

CHEMOLINE 12 FDA	Test Voltage [kV/mm]	Max. Test Voltage [kV]
unvulcanised	3.0	15.0
vulcanised	3.0	15.0

SAFETY MEASURES
The material safety data sheets of the individual components, the safety instructions on the packing (label) as well as the legal requirements for handling hazardous materials must be observed.

CHEMOLINE 12 FDA

PACKING UNITS

The products are supplied in the following standard package sizes:

Product	Size	Article No.
ADHESIVE TC 5000	9 kg	525 2286
ADHESIVE TC 5000	25 kg	525 2224
PRIMER PR 500-1	0.75 kg	525 2303
RIMER PR 500-1	4.5 kg	525 2470
PRIMER PR 500-1	9 kg	525 2327
PRIMER PR 500-1	25 kg	525 2334
PRIMER S 500-2	0.75 kg	525 2310
PRIMER S 500-2	9 kg	525 2341
PRIMER S 500-2	25 kg	525 2358
SOLVENT CF-CE	10 l	595 9163

PACKAGING OF RUBBER SHEETS

The rubber sheets are wrapped with PE-separating sheets on cardboard cores, and packed freely suspend in stable, stackable card boxes, to avoid pressure points.
CHEMOLINE 12 FDA is manufactured by extrusion in the following standard sizes:

Size (Tolerances according EN 14879-4)	Article No.
2 mm x 1100 mm x 10000 mm	528 1650
3 mm x 1100 mm x 10000 mm	528 1660
4 mm x 1100 mm x 10000 mm	528 1670
5 mm x 1100 mm x 10000 mm	528 1680
6 mm x 1100 mm x 10000 mm	528 1690

STORAGE

The products must be stored in a cool and dry place, away from direct sunlight. The rubber sheets must be stored free of pressure, best in the original packaging. The rubber sheets may not receive any pressure points. At the specified storage temperatures a shelf life of the products is given of at least for the following periods:

Product	Temperature	Shelf Life
ADHESIVE TC 5000	5 - 20°C	12 Months
CHEMOLINE 12 FDA	≤ +25°C	6 Months
CHEMOLINE 12 FDA	≤ +5°C	12 Months
PRIMER PR 500-1	5 - 20°C	12 Months
PRIMER S 500-2	5 - 20°C	12 Months
SOLVENT CF-CE	5 - 25°C	60 Months

If the storage time is exceeded, the materials must be tested before use. Higher storage and transport temperatures will reduce the shelf life. The containers must be kept tightly closed. Liquid products must be stored frost-proof. In addition, the DIN 7716 must be observed.

Technical Data	Standard	Unit	Value
Polymer Base	ISO 1629 (ASTM D1418)	-	CIIR
Abrasion	ISO 4649 (ASTM D5963)	mm^3	≤ 300*
Density	EN ISO 1183-1 (ASTM D792)	g/cm^3	1.09 ± 0.02
Hardness - Shore A	ISO 48-4 (ASTM D2240)	-	50 ± 5*
Max. Surface Pressure	-	N/mm^2	2
Surface Resistance	EN 62631-3-1	Ω	2.6×10^7
Elongation at Break	DIN 53504 (ASTM D412)	%	≥ 300*
Tensile Strength	DIN 53504 (ASTM D412)	N/mm^2	≥ 8*
Impact Resilience	DIN 53512	%	≥ 10*
Peel Strength to Steel	ISO 813 (ASTM D429)	N/mm	≥ 4
Temperature Range	-	°C	-40 up to +85

* S2 dump-bell test piece after press vulcanization

Note: The indicated temperatures are dependent on the present load and may vary

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