PRODUCT INFORMATION
CHEMONIT 31

PRODUCT DESCRIPTION
CHEMONIT 31 is a black hard rubber lining based on Natural rubber (NR).

FIELDS OF APPLICATION
CHEMONIT 31 is used mainly for the workshop rubber lining of steel components which are exposed to chemical loads. The field of applications are mainly chemical plants, chlorine and steel industry, mineral processing plants, electroplating facilities and environmental protection plants. Some typical examples of applications are the rubber linings of storage tanks, filter tanks, agitated tanks, ion exchangers, electroplating baths, centrifuge drums, pipe spools, as well as the cell covers and inlet-outlet boxes in the chlor-alkali process (electrolysis) or the filter vessels in water treatment field.

APPROVALS
CHEMONIT 31 is approved (**Z-59.22-140**) by the German Institute of Construction Technology (DIBt) for steel storage vessels.

FEATURES
- Strong chemical resistance against mineral acids, bases and organic chemicals
- High diffusion resistance
- Strong resistance against temperature excursions
- Application onto steel components
- Workshop rubber lining

CHEMICAL RESISTANCE
Information on the chemical request is available on request.

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

SURFACE PRE-TREATMENT
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 Fachbericht #28 and EN ISO 8502.
Ferrite steel surfaces shall be abrasive blasted to "Near White Metal" in accordance with EN ISO 12944-4. A standard preparation degree of SA 2½ (SSPC SP-10; NACE #2) as specified in EN ISO 8501-1 and a “medium (G)” roughness degree as specified in EN ISO 8503-1 must be achieved. A minimum surface profile of Rz ≥ 60 microns 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.

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
CHEMONIT 31 is bonded onto steel components by using **ADHESIVE SH-3A SOLUTION** & **ADHESIVE PARA SOLUTION**. Alternatively, **CHEMONIT 31** can be adhered to the steel using only **ADHESIVE SH-3A SOLUTION**.

APPLICATION METHOD UND 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 HG 1**	Roll / Spray	ca. 150
2. Coat steel*	**PRIMER HG 2**	Brush	ca. 150
3. Coat steel	**ADHESIVE SH-3A SOLUTION**	Brush	ca. 250
4. Coat steel	**ADHESIVE SH-3A SOLUTION**	Brush	ca. 250
1. Coat rubber	**ADHESIVE PARA SOLUTION** or **ADHESIVE SH-3A SOLUTION**	Brush	ca. 250

* The two-component primer system **PRIMER HG 1** & **PRIMER HG 2** is only used for steam vulcanization or for special applications (e.g. rubber lining on stainless steel).

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 II RT or P as well as the test pistols of Wegener model WEG 20 or 22 or 100 are allowed.

CHEMONIT 31	Test Voltage [kV/mm]	Max. Test Voltage [kV]
unvulcanised	5.0	20.0
vulcanised	5.0	20.0

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.

CHEMONIT 31

PACKING UNITS

The products are supplied in the following standard package sizes:

Product	Size	Article No.
ADHESIVE PARA SOLUTION	6 kg	538 1504
ADHESIVE PARA SOLUTION	21 kg	538 1460
ADHESIVE SH-3A SOLUTION	4 kg	538 1410
ADHESIVE SH-3A SOLUTION	8 kg	538 1511
ADHESIVE SH-3A SOLUTION	21 kg	538 1430
PRIMER HG 1	0.75 kg	525 2949
PRIMER HG 1	4.5 kg	525 3050
PRIMER HG 1	9 kg	525 2956
PRIMER HG 2	0.75 kg	525 2970
PRIMER HG 2	4.5 kg	525 3060
PRIMER HG 2	9 kg	525 2987
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.
CHEMONIT 31 is manufactured by extrusion in the following standard sizes:

Size (Tolerances according EN 14879-4)	Product-No.
2 mm x 1100 mm x 10000 mm	529 3922
3 mm x 1100 mm x 10000 mm	529 3960
4 mm x 1100 mm x 10000 mm	529 4000
5 mm x 1100 mm x 10000 mm	529 4048
6 mm x 1100 mm x 10000 mm	529 4086

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 PARA SOLUTION	≤ +20°C	12 Months
ADHESIVE SH-3A SOLUTION	5 - 20°C	12 Months
CHEMONIT 31	≤ +25°C	3 Months
CHEMONIT 31	≤ +5°C	12 Months
PRIMER HG 1	5 - 20°C	12 Months
PRIMER HG 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	ISO 1629	-	NR
Bending Strength	EN ISO 178	N/mm²	≥ 80*
Density	EN ISO 1183-1	g/cm³	1.16 ± 0.02
Modulus of Elasticity	EN ISO 527 (ASTM D638)	N/mm²	≥ 2000*
Hardness Shore D	ISO 7619-1 (ASTM D2240)	-	75 ± 5**
Max. Surface Pressure	-	N/mm²	10
Adhesion Strength Steel	EN ISO 4624 (ASTM D429; Method E)	N/mm²	≥ 6
Elongation at Break	DIN 53504 (ASTM D412)	%	≥ 3***
Tensile Strength	DIN 53504 (ASTM D412)	N/mm²	≥ 40***
Coefficient of Thermal Expansion	DIN 53752	1/K	90 x 10^{-6}
Max. Continuous Operating Temperature	-	°C	+100
Temperature Range	-	°C	-15 up to +100

* Press vulcanisation ** Autoclave vulcanisation *** 4 mm rubber // **Note:** The indicated temperatures are dependent on the present load and may vary

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