



## PRODUCT INFORMATION

### CHEMONIT 181

#### PRODUCT DESCRIPTION

**CHEMONIT 181** is a hard rubber lining based on polyisoprene rubber (IR) and styrene butadiene rubber (SBR).

#### FIELDS OF APPLICATION

**CHEMONIT 181** is used for the workshop rubber lining of steel components exposed to chemicals. Typical applications are the linings of storage, filter and agitator tanks, water treatment tanks, crystallisation reactors, centrifuge drums, fans as well as tanks and pipelines in nuclear power plants.

#### FEATURES

- High chemical resistance to mineral acids and bases
- High diffusion resistance
- Workshop rubber lining of metallic substrates

#### CHEMICAL RESISTANCE

Requests for chemical resistance can be sent to [awt@tiptop-elbe.de](mailto:awt@tiptop-elbe.de).

#### SUBSTRATE

Substrates are components made of non-ferrous metals, cast materials, unalloyed or austenitic steel. The components must be designed and manufactured in accordance with EN 14879-1. The substrate must remain dry during application.

#### SURFACE PRE-TREATMENT

EN14879-1 and the TIP TOP specification "Corrosion protection of metallic components" must be observed. Unalloyed steel must be blasted to "Near White Metal" in accordance with EN ISO 12944-4. A surface preparation degree of SA 2½ according EN ISO 8501-1 and a roughness degree "Medium (G)" according EN ISO 8503-2 must be achieved. A minimum roughness depth of  $Rz \geq 60 \mu m$  is required. After blasting, the formation of new rust should be prevented by suitable measures (e.g. priming).

#### CLIMATIC CONDITIONS

During application, direct or indirect sunlight must be avoided and the climatic conditions specified in the application instruction must be observed. To avoid condensation, a dew point difference of at least 3K must be maintained. During application, the materials must never be colder than the ambient temperature at the workplace.

#### ADHESIVE SYSTEM

**CHEMONIT 181** is bonded to steel with **PRIMER HG 1 & PRIMER HG 2** in combination with **ADHESIVE SH-3A** and **ADHESIVE PARA SOLUTION**. **ADHESIVE SH-3A SOLUTION** can alternatively be used for the first coat rubber.

#### APPLICATION METHOD | CONSUMPTION | OPEN TIME

Coat	Product	Application	Consumption	Min. Open Time	Max. Open Time
1. Coat steel	<b>SH-3A + 10% PRIMER HG 2</b>	Brush	ca. 200 g/m <sup>2</sup>	3 h	14 d
2. Coat steel	<b>ADHESIVE SH-3A SOLUTION</b>	Brush	ca. 200 g/m <sup>2</sup>	6 h	7 d
1. Coat rubber	<b>ADHESIVE PARA SOLUTION</b>	Brush	ca. 150 g/m <sup>2</sup>	10 min	2 h

For steam vulcanisation or special applications (e.g. rubber coating on stainless steel), **PRIMER HG 1 & PRIMER HG 2** must also be used on steel. Instead of the mixture of **SH-3A + PRIMER HG 2**, only **ADHESIVE SH-3A SOLUTION** is used for bonding on steel during steam vulcanisation or for special applications. Always observe the current application instruction before using the products. The specified open times apply to a temperature range of +20°C to +25°C.

#### CLEANING

All equipment should be cleaned with **SOLVENT CF-CE** immediately after use. The equipment should be cleaned in a well-ventilated area.



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#### VULCANISATION

Location	Vulcanisation
Workshop	Vulcanisation in an autoclave under pressure using hot air or steam

When vulcanising the product, the information in the application instruction must be observed.

#### SPARK TEST

The spark test is carried out in accordance with EN 14879-4. Only the Elmed Isotest IIRT, Isotest 3P or Isotest Inspect 35 high-voltage testers and the Wegener WEG 20, WEG 22 or WEG 100 test pistols may be used. Multiple tests can reduce the dielectric strength of the lining materials and must be taken into account by reducing the test voltage by at least 1 kV/mm. Special agreements are required for linings that have already been in operation.

CHEMONIT 181	Test voltage	Max. Test voltage
unvulcanised & vulcanised	5,0 kV/mm	20,0 kV

#### APPROVALS AND TEST CERTIFICATES

- Approval for nuclear power plants in accordance with AVS D 6.1/50 Rev. A
- Certificate of suitability for aqueous food in accordance with the guidelines CFR 21§ 177.2600 of the Food and Drug Administration (FDA)
- British WRAS approval in accordance with BS6920-1 for drinking water up to 60°C

#### DELIVERY FORM | MINIMUM SHELF LIFE

Product	Packaging	Article No.	Storage temperature	Min. shelf life
ADHESIVE PARA SOLUTION	6 kg	538 1504	5 - 25°C	12 Mon
ADHESIVE PARA SOLUTION	21 kg	538 1460	5 - 25°C	12 Mon
ADHESIVE SH-3A SOLUTION	4 kg	538 1410	5 - 25°C	12 Mon
ADHESIVE SH-3A SOLUTION	8 kg	538 1511	5 - 25°C	12 Mon
ADHESIVE SH-3A SOLUTION	21 kg	538 1430	5 - 25°C	12 Mon
PRIMER HG 1	0.75 kg	525 2949	5 - 25°C	12 Mon
PRIMER HG 1	4.5 kg	525 3050	5 - 25°C	12 Mon
PRIMER HG 1	9 kg	525 2956	5 - 25°C	12 Mon
PRIMER HG 1	25 kg	525 2963	5 - 25°C	12 Mon
PRIMER HG 2	0.75 kg	525 2970	5 - 25°C	12 Mon
PRIMER HG 2	9 kg	525 2987	5 - 25°C	12 Mon
PRIMER HG 2	25 kg	525 2994	5 - 25°C	12 Mon
SOLVENT CF-CE	10 l	595 9163	5 - 25°C	60 Mon

Dimensions	Article No. (DIN*)	Article No. (MIN)	Storage temperature	Min. shelf life
2 mm x 1100 mm x 10000 mm	529 4921	-	≤ +5°C   ≤ +25°C	12 Mon   3 Mon
3 mm x 1100 mm x 10000 mm	529 4969	20000043	≤ +5°C   ≤ +25°C	12 Mon   3 Mon
4 mm x 1100 mm x 10000 mm	529 5009	20000045	≤ +5°C   ≤ +25°C	12 Mon   3 Mon
5 mm x 1100 mm x 10000 mm	529 5047	20000047	≤ +5°C   ≤ +25°C	12 Mon   3 Mon
6 mm x 1100 mm x 10000 mm	529 5085	20000049	≤ +5°C   ≤ +25°C	12 Mon   3 Mon

\* Tolerances according to EN 14879-4

The rubber sheets are wrapped in PE film on cardboard sleeves and packed freely suspended in sturdy, stackable cardboard boxes. The products must be stored in a cool, dry place protected from direct sunlight. If the minimum shelf life is exceeded, the materials must be checked before use. Higher storage and transport temperatures

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#### DELIVERY FORM | MINIMUM SHELF LIFE

shorten the shelf life. The containers must be stored frost-free and tightly closed and resealed after each removal. DIN 7716 must be observed. Information on handling, storage & transport can be found in the safety data sheet.

#### SAFETY MEASURES

The safety data sheets for the individual components and the legal regulations for handling hazardous substances must be observed. The prescribed personal protective equipment must be worn. Information on disposal can be found in the safety data sheets for the individual products. The safety data sheets can be downloaded from our homepage in the download area.

#### PHYSICAL DATA

Properties	Standard	Unit	Value
Adhesive strength steel	EN ISO 4624 (ASTM D429, Method E)	N/mm <sup>2</sup>	≥ 6
Bending strength	EN ISO 178	N/mm <sup>2</sup>	≥ 40*
Colour	-	-	black
Density	EN ISO 1183-1 (ASTM D792)	g/cm <sup>3</sup>	1.32 ± 0.02
Elongation at break	DIN 53504 (ASTM D412)	%	≥ 1.5***
E-modulus	EN ISO 527 (ASTM D638)	N/mm <sup>2</sup>	≥ 1500*
Max. Surface pressure	-	N/mm <sup>2</sup>	10
Polymer base	ISO 1629 (ASTM D1418)	-	IR / SBR
Shore hardness	ISO 48-4 (ASTM D2240)	Shore D	75 ± 5**
Temperature range	-	°C	-10 up to +100
Tensile strength	DIN 53504 (ASTM D412)	N/mm <sup>2</sup>	≥ 20***

The specified temperatures depend on the existing load and can therefore vary.

\* Press vulcanisation \*\* Autoclave vulcanisation \*\*\* 4 mm rubber

Information given in the fact sheet above corresponds to the current knowledge available to us regarding our products at the time of its drafting and is intended as a guideline for informational purposes. However, because of the multiple possibilities regarding possible applications, processing and on site conditions, any information given in the fact sheet above is not legally binding, in particular, without being limited to, such information shall not be interpreted as a warranty of merchantability or of fitness for a particular purpose. Customer therefore is advised to conduct its own testing or make an inquiry with our technical department before ordering. We reserve the right to change the product at any time, in particular, without being limited to, minor changes because of advancements in technology. If by way of exception, the information given in the fact sheet above is incorporated by reference into any contract concluded with us under German Law, such information, shall only be interpreted as determining the specific requirements of the contractual products as set out in § 434 BGB (German Civil Code) and shall not be interpreted as constituting a guarantee of condition.