

## PRODUCT INFORMATION

### CHEMOLINE 4 CN (BIIR)

#### General properties

**CHEMOLINE 4 CN** is a black soft rubber material on the basis of bromobutyl rubber (BIIR), equipped with a bonding layer, which is reactive and easy to bond. This lining material is bonded onto steel, concrete and many other substrates by means of special TIP TOP contact adhesives, according to the cold bonding system.

As the vulcanisation (intramolecular cross-linkage) has already been carried out during manufacturing, neither subsequent thermal treatment nor longer waiting times until complete vulcanisation are required after completion of the lining operation – the lining material can be put under chemical, mechanical and thermal stress immediately after the lining is completed.

The essential properties of the **CHEMOLINE 4 CN** lining material are its strong resistance to mineral acids, bases, polar solvents, aqueous phases and especially its excellent resistance to diffusion of gases such as sulphur dioxide, nitric oxides and saturated water vapour.

The above mentioned lining material can be used from – 40 °C to + 85 °C. Other conditions should be checked upon request.

#### General Approval of German Institute for Construction Technology (DIBt)

The lining material **CHEMOLINE 4 CN** is approved by the German Institute for Construction Technology (DIBt) as a corrosion protection for storage tanks that are subject to the German water resources law (WHG 19 I).

CERTIFICATE-No.: Z-59.22-149

#### Fields of application

Due to its resistance to numerous chemicals the lining material **CHEMOLINE 4 CN** is worldwide used in the chemical, chlorine and steel industry, in mineral processing installations as well as in the field of environmental protection. Here, structural steel parts subject to high chemical, mechanical and thermal stress, such as storage bins, filter cells, mixing tanks, crystallisers, condensers and FGD plants can be protected from corrosion by using the **CHEMOLINE 4 CN** lining material.

Especially in the metal mining industry several 100.000 m<sup>2</sup> have been installed successfully.

|                                     |                       |                           |
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### Shelf life

**CHEMOLINE 4 CN** material can be stored without any loss of quality for a period of up to 24 months at a maximum temperature of + 25 °C. The DIN 7716 standard has to be observed.

### Application on steel

**CHEMOLINE 4 CN** is bonded onto steel by using the CFC-free **METAL PRIMER PR 304** in combination with **CEMENT BC 3004**. Alternatively the adhesive system **METAL PRIMER PR 300 / CEMENT BC 3000** can be used. The standards EN 14879-1, EN 14879-4 and EN ISO 12944-4 have to be observed.

### Spark test

The spark test (Holiday Test) is carried out according to the EN 14879-4. An earthed high-voltage spark tester Elmed-Isotest II RT or alternatively the Wegener AC Spark Tester WEG 20/22 must be used.

The test voltage has to be set as follows:

| Lining material                  | Test voltage         |
|----------------------------------|----------------------|
| <b>CHEMOLINE 4 CN</b> vulcanised | 4 KV/mm (max. 20 KV) |

## Mechanical - Physical Characteristics

| Properties  | Units                    | Standard      | Value                 |
|---|--------------------------|---------------|-----------------------|
| Polymer   |                          | ISO 1629      | BIIR                  |
| Tensile strength determined on:                     | [MPa]<br>S2 Bar          | DIN 53504     | ≥ 5 <sup>1)</sup>     |
| Elongation at break determined on:                  | [%]<br>S2 Bar            | DIN 53504     | ≥ 370 <sup>1)2)</sup> |
| Hardness  | [Shore A]                | DIN 53505     | 50 ± 5 <sup>2)</sup>  |
| Rebound resilience                                  | [%]                      | DIN 53512     | ≥ 6                   |
| Abrasion  | [mm <sup>3</sup> ]       | ISO 4649      | ≤320                  |
| Density   | [g / cm <sup>3</sup> ]   | EN ISO 1183-1 | 1.30 ± 0.02           |
| Bonding strength to steel                           | [N/mm]                   | DIN ISO 813   | ≥ 4                   |
| Surface resistivity                                 | [Ω]                      | DIN IEC 60093 | ≥ 10 <sup>12</sup>    |
| Test voltage  | [KV/mm]                  | EN 14879-4    | 4                     |
| Operating temperature                               | [° C]                    |               | ≤ 85                  |
| Thermal conductivity                                | [W / mK]                 | DIN 51046     | 0.33                  |
| Water vapour permeability (thickness of sheet 4 mm) | [g / m <sup>2</sup> · d] | DIN 53122     | 0.04                  |

<sup>1)</sup> Press vulcanisation

<sup>2)</sup> Tested on 4 mm sheets, autoclave vulcanised

The information given before is based on approved test results and represents statistical product data, which however does not necessarily guarantee the specific properties of the product.

We reserve the right to changes to technical specifications without prior notice, provided these ensure technical improvement without major modifications to the product itself.

## Basic Program **CHEMOLINE 4 CN**

### Availability and dimensions

Rubber sheets with PE separating sheets on hard core suspended freely in cardboard boxes.

| Length [mm] | Width [mm] | Thickness [mm] | Quantity [m <sup>2</sup> ] | Product-No. |
|-------------|------------|----------------|----------------------------|-------------|
| 10.000      | 1.100      | 2              | 11                         | 528 7880    |
| 10.000      | 1.100      | 3              | 11                         | 528 7897    |
| 10.000      | 1.100      | 4              | 11                         | 528 7907    |
| 10.000      | 1.100      | 5              | 11                         | 528 7914    |
| 10.000      | 1.100      | 6              | 11                         | 528 7921    |

This data sheet is for informational purposes only. All data provided herein is based on in-depth research and testing, however no liability whatsoever can be assumed. Since we are constantly endeavouring to up-date and improve our products, we recommend noting the index and issue date indicated on this data sheet and to inquire as to whether any properties have changed in the interim. This Product Information Sheet replaces all prior issues. Please contact our Technical Consultant for detailed information in case of ambiguities.

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