

## Elastomer bonding agent

### Composition

Polymers and heat reactive components in an organic solvent system.

### Description:

Chemosil 411 is a versatile heat activated bonding agent which will bond a variety of rubber compounds to metal and polar polymeric substrates.

In some circumstances Chemosil 411 may be used as a single coat. For general use Chemosil 411 should be used in combination with an appropriate metal primer such as Chemosil 211. When used with Chemosil 211 the in service environmental resistance of the final bond will be very much improved.

Chemosil 411 bonds elastomer compounds based on natural rubber (NR), butadiene (BR), isoprene (IR), styrene-butadiene (SBR), nitrile (NBR) and chloroprene (CR), ethylene-propylene (EPDM) and butyl (IIR) rubber to most metals, alloys and polar polymeric substrates.

Bonding occurs during the vulcanisation of the rubber. Typical cure temperature ranges for moulding processes are 130-180 °C. Bonds made with Chemosil 411 exhibit good resistance to oil and other aggressive media.

### Specifications:

### Method \*)

Solids content	:	22.0 - 26.0	weight-%	970074
Viscosity at manufacturing	:	200 - 600	mPas	950055
Density	:	0.96 - 1.00	g/ml	950014

\*) Methods  
970074: Determination of Dry Residue, 30 min @ 130°C  
950055: Brookfield Viscometer, Model LVT Spindle 2, 30 rpm, @25°C  
950014: Determination of Density @ 20°C

### Properties:

Appearance : black thixotropic liquid

## Processing:

A properly prepared substrate is essential to achieve consistent elastomer bond performance. All oil, grease and other soluble contamination should be removed by solvent degreasing or alkaline cleaning. Rust, scale and other non soluble contaminants should be removed by mechanical or chemical methods. Grit blasting is the most commonly used mechanical method. A second degreasing stage after the mechanical treatment is strongly recommended to remove residual grease, oil and abraded dusts. Chemical treatments for ferrous substrates usually involve the use of phosphatising agents. Full details of the special chemical treatments required for non ferrous and plastic substrates are given in the information sheet, "*Preparation Of Substrates For Chemosil Bonding*". Chemosil 411 contains dispersed solids and must be thoroughly stirred before and at frequent intervals during use. Chemosil 411 can be applied undiluted by brush or roller coating or when diluted by spray or dip techniques.

For a recommended dry film thickness of ~ 20 microns the following dilution is recommended:

Brushing/rolling :	undiluted
Dipping :	up to 10 % xylene or toluene
Spraying :	30 - 90 % xylene or toluene (4 mm cup 18-20 sec., air pressure 3-4 bar, nozzle Ø 1-2 mm, distance ~ 50 cm)

Dilution will accelerate settling, maintain sufficient agitation to ensure product uniformity. A thin uniform coating gives best results, avoid applying thick coats which can give poor drying and may lead to film displacement (sweep) during moulding. At ambient temperature allow 30 minutes drying time after coating. Elevated temperatures (up to 90° C) in hot air ovens or drying tunnels will reduce the drying time required. Chemosil 411 will dry to a hard, non tacky film.

Coated components can be stacked or loaded into bins for transport and storage. Clean cotton gloves should be worn when handling coated components. Coated components can be stored for up to 3 months before bonding without adversely affecting the bond performance. Coated components should be protected from dust, moisture and other contamination during storage.

## Safety/hazard Information:

See Health and Safety Data Sheet

## Delivery form:

Containers 10 kg, 25 kg, drums 190 kg

## Shelf life:

At least 12 months in closed containers below 25°C.

The above information and recommendations are based on our knowledge and experience. Due to different materials and conditions of application which are beyond our control we strongly recommend that sufficient tests are carried out in order to ensure that our products are suitable for the intended processes and applications.