

**PRODUCT DESCRIPTION**

Anaerobic adhesive S1-02 is a single component sealant, which contains acrylic and methacrylic esters, organic peroxides. The product cures when deprived of contact with oxygen in the presence of metal ions.

**APPLICATION**

Sealing of flat surfaces and threaded connections..

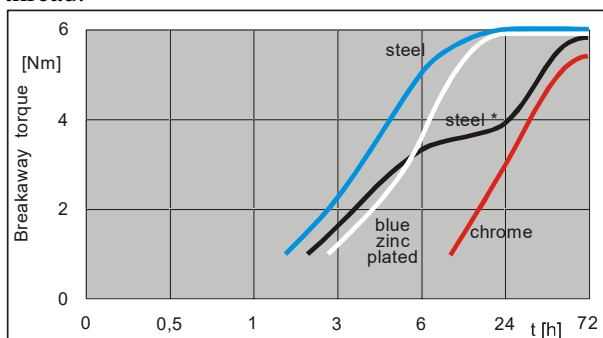
**PROPERTIES**

|                                       |                  |
|---------------------------------------|------------------|
| Form                                  | tixotropic paste |
| Density [g/cm <sup>3</sup> ] at 25 °C | 1,04             |
| Colour                                | yellow           |

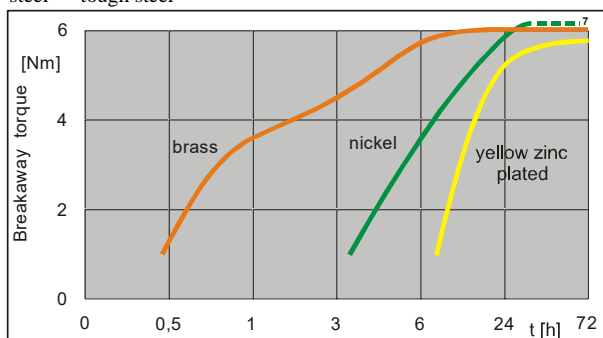
**TYPICAL CURING PERFORMANCE**

**Cure speed vs. substrate**

The graphs show the increase in breaking torque screw connection as a function of time for different types of substrate. The tests were performed in accordance with the standard ISO 10964 using M10 bolts and nuts coarse thread.

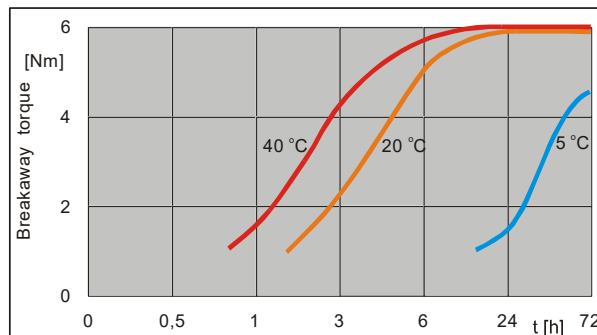


steel\* – tough steel



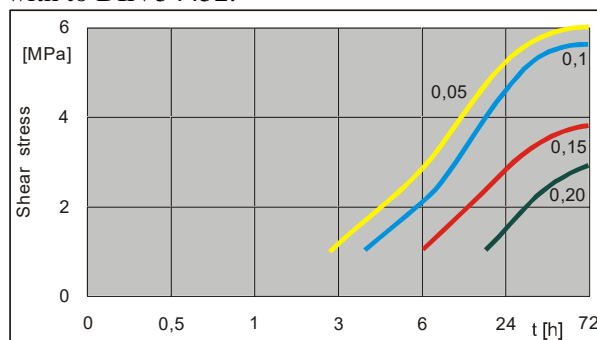
**Cure speed vs. temperature**

The graph shows the increase in the breaking torque of threaded connection as a function of time for different ambient temperature values. The tests were carried out in accordance with to ISO 10964 using M10 bolts and nuts coarse thread.



**Cure speed vs. bond gap**

The graph shows the increase in compression shear stress as a function of time for different size of bond gap. The tests were carried out in accordance with to DIN 54452.



**PHISICAL PROPERTIES OF CURED MATERIAL**

|  |                        |
|--|------------------------|
| Coefficient of thermal expansion [1/K]     | ca. $8 \times 10^{-5}$ |
| Coefficient of thermal conductivity [W/mK] | ca. 0,1                |
| Specific heat [J/kgK]                      | ca. 300                |

**PERFORMANCE OF CURED MATERIAL**

Breakaway torque [Nm]

[ISO 10964 (3.3)]

Value: **6**

Range: 3-9

Shear strength [MPa]

[DIN 53283]

Value: **6**

Range: 3-9

The above-mentioned parameters were determined after 72 h curing at the temperature of 22 °C using M10 steel coarse thread bolts and nuts and calibrated shaft and hubs pairs.

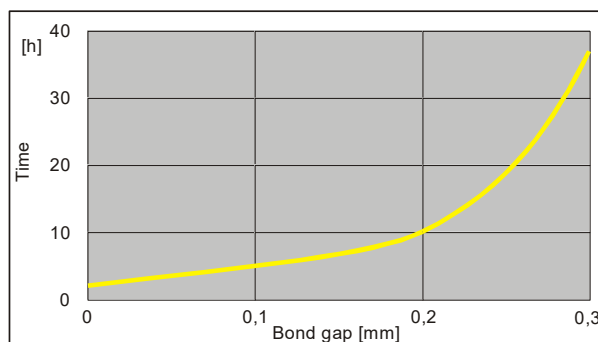
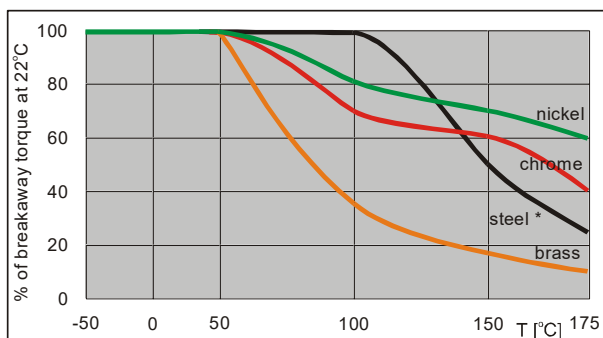
**TEMPERATURE RESISTANCE**

The tests were carried out after 72h curing at 22°C

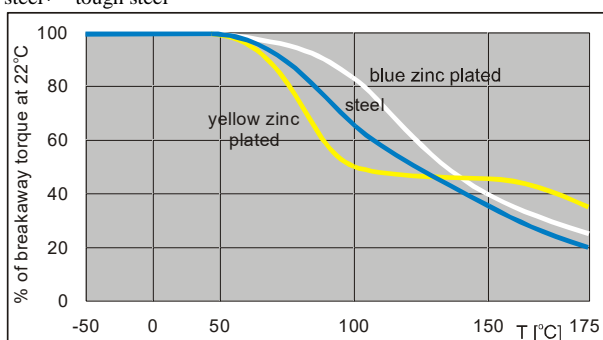
**Breakaway torque vs temperature**

The graphic presentations show the change of breaking torque of a threaded connection as a function of temperatures for various types of substrate. The tests were carried out on M10 steel coarse thread bolts and nuts.

Tested according to ISO 10964 at temperature

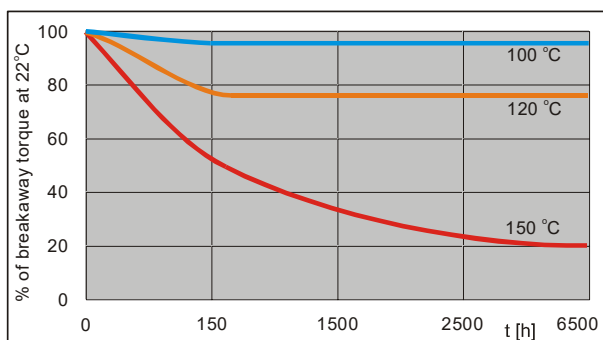


steel\* – tough steel



### Breakaway torque of a threaded connection as a function of time at elevated temperatures (Heat Aging)

The graphic presentations show the change of breaking torque as a function of time at various temperatures.. The tests were carried out on M10 steel blue zinc plated coarse thread bolts and nuts. Tested according to ISO 10964. Parts are aged at temperature indicated and tested at 22°C



### Tightness of flat joints

The diagram shows the time of obtaining the tightness at a pressure of 0.7 MPa in a flat connection as a function of the gap size. The tests were carried out with the use of steel flange couplings (width of the applied sealant - 18mm). The pressure tests were performed at the temperature of 20 °C with the use of compressed air.

### Chemical resistance short table

| Solvent               | Chemical resistance |
|-----------------------|---------------------|
| Petrol                | +                   |
| Diesel oil            | +                   |
| Brake fluid           | +                   |
| Motor oil 130 °C      | +                   |
| Glycol                | +                   |
| Paraffin              | +                   |
| Ethanol               | +                   |
| Nitric acid 10%       | +                   |
| Vinegar acid 10%      | +                   |
| Amine                 | +                   |
| Phenol                | +                   |
| Hydroxypropionic acid | +                   |
| Salt water            | +                   |
| Ethanol               | +                   |
| Natural gas           | +                   |
| Ammonia               | -                   |
| Chlorine              | -                   |
| Oxygen                | -                   |

+ - can be used unreservedly

- - not recommended

The complete Resistance Table for CHESTER anaerobic materials can be find on our website.

## **OTHER INFORMATION**

### **Storage**

Product should be stored in closed, original containers at a temperature between +5°C to +28°C.

Because of the curing mechanism anaerobic adhesives are delivered in packages partly filled with an adhesive. Air space in bottle is required to keep contents liquid. Keep in dry and clean place.

### **Instruction for use**

The applied surfaces should be cleaned and free of grease. The adhesive should be spread only through the batching tip. Do not dip nuts, bolts, metal parts, paste brushes or any other things in the bottle with an adhesives. If the process of curing the adhesives is not satisfactory by reason of low temperature, big bond gap or inactive material, **Aktywator A** of Chester Molecular should be applied.