chester molecular ®
05-092 Łomianki ul. Krzywa 20B Poland
tel./fax. +48 (22) 751 28 06/07 www.chester.com.pl

Technical Data Sheet

Chester Molecular **S1-01**

Research and Development Department

December 2001

PRODUCT DESCRIPTION

CHESTER MOLECULAR product **S1-01** is a component, anaerobic sealant, which contains acrylic and methacrylic esters, hydrogen peroxides.
The product cures when confined in the absence of air between close fitting metal surface.

APPLICATION FIELDS

Sealing leakage from thread and fit joints.

PROPERTIES

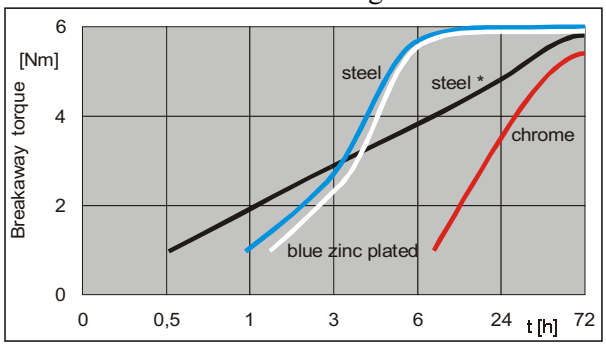
Form	tixotropic paste
Density [g/cm3] at 25 °C	1,04
Colour	yellow
Flash point	>100 °C

TYPICAL CURING PERFORMANCE

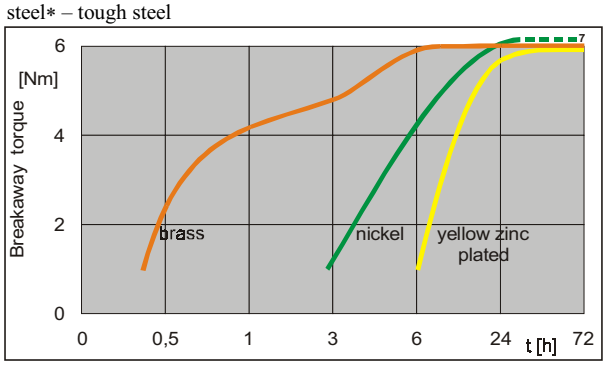
The rate of cure will depend on substrate used, the ambient temperature and the bond gap.

Cure speed vs. substrate

The graphs below show the relative increase in breakaway torque developed with time compared to various materials. Developed on M10 medium bolts and nuts. Tested according to ISO 10964.

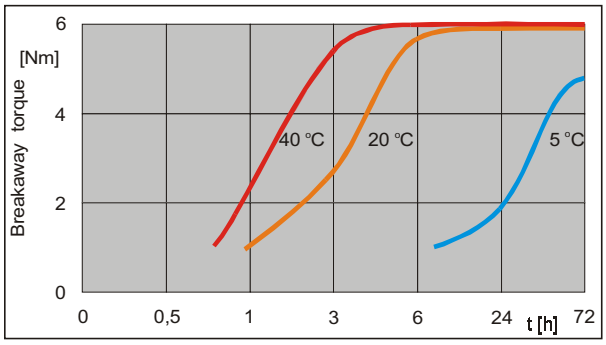


steel* – tough steel



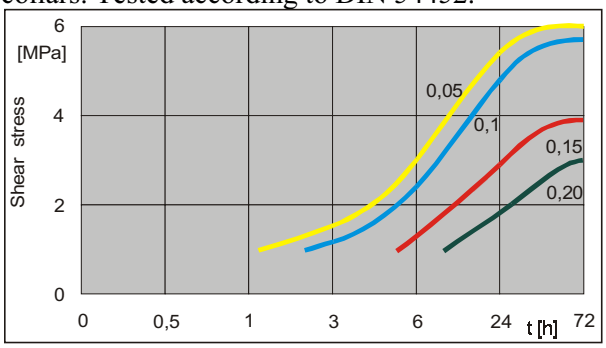
Cure speed vs. temperature

The graph below shows the relative increase in breakaway torque developed with time at different temperatures. Developed on M10 medium steel bolts and nuts. Tested according to ISO 10964.



Cure speed vs. bond gap

The graph below shows the increase in shear stress developed with time compared to different controlled gaps. Developed on steel pins and collars. Tested according to DIN 54452.



PHISICAL PROPERTIES OF CURED MATERIAL

Coefficient of thermal expansion [1/K] ca. **$8x10^{-5}$**
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 stress [MPa]
[DIN 53283]
Value: **6**
Range: 3-9
After 24h hardening at 22°C with M10 medium steel nuts and bolts or steel steel pins and collars.

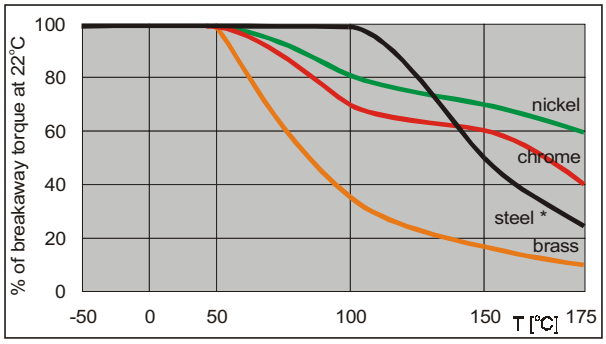
ENVIRONMENTAL RESISTANCE

Tested acording to ISO 10964. Developed after 72h at 22°C

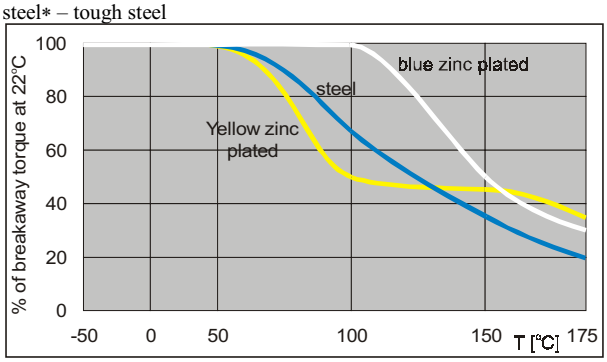
Breakaway torque vs temperature

The graphic presentations show the relative decrease or increase in breakaway torque developed with temperature compared to various materials. Developed on M10 medium bolts and nuts. Tested according to ISO 10964.
Parts are tested at temperature

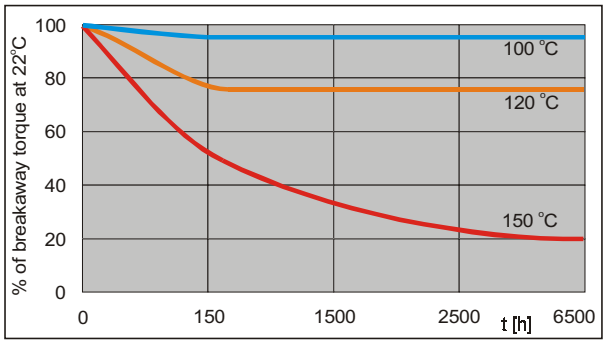
The information contained above refers to the best of our current knowledge of this product. However, its use tsays under the control of the customer.
This Technical Data Sheet cannot hold CHESTER MOLECULAR responsible in anyway.



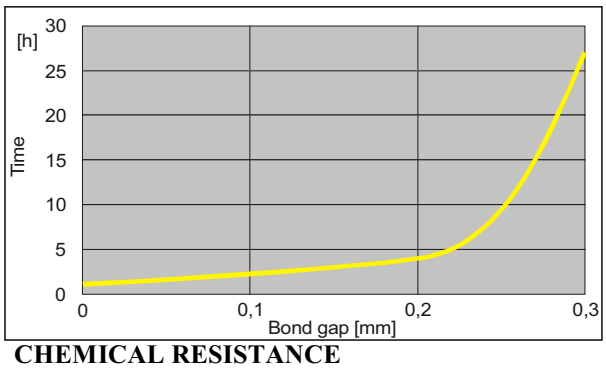
steel* – tough steel



Breakaway torque at higher temperatures over a long period of time (Heat Aging)
The graphic presentation shows the relative decrease or increase in breakaway torque as a function of the duration at various temperatures, compared to blue zinc plated. Developed on M10 medium bolts and nuts. Tested according to ISO 10964. Parts are aged at temperature indicated and tested at 22C.



Pressure-tight joints on the treads.
The graph below shows the time to obtain pressure-tight fit joint (0,7 MPa pressure) compared to different bond gap. Developed on steel tube coupling (the width of the applying sealant is 18 mm). Tested at 20C with compressed air.



CHEMICAL RESISTANCE

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

In the table, the following nomenclature has been used:
+ - can be used without restriction
- - not recommended
The complete Resistance Table for CHESTER anaerobic materials can be find on our website www.chester.com.pl

GENERAL INFORMATION

Storage
Product should be stored in closed, original containers at a temperature between +5°C to+28°C. Keep in dry and clean place.
Stability 12 months.

The information contained above refers to the best of our current knowledge of this product. However, its use tsays under the control of the customer. This Technical Data Sheet cannot hold CHESTER MOLECULAR responsible in anyway.

Instruction for use

The applied surfaces should be cleaned and free of grease. The sealant should be spread only through the batching tip. If the process of curing the adhesives is not satisfactory by reason of low temperature, big bond gap or inactive material, Activator A of CHESTER MOLECULAR should be applied.

The information contained above refers to the best of our current knowledge of this product. However, its use tsays under the control of the customer.
This Technical Data Sheet cannot hold CHESTER MOLECULAR responsible in anyway.