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

PRODUCT DESCRIPTION

CHESTER MOLECULAR product **C–12** is a single component, anaerobic adhesive, 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.
Protection the most properly stressed threaded joints from leakage and corrosion.
Protection stud-bolts.
Mounting bearings

PROPERTIES

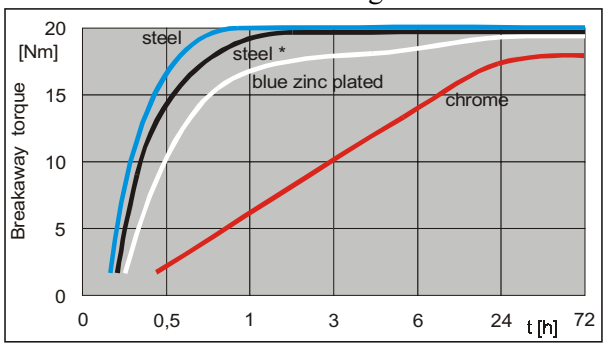
Form	liquid
Density [g/cm3] at 25 °C	1,12
Colour	red
Flash point	>100 °C
Viscosity [MPa] at 25 °C [spindle 3 (DIN 54453)]	850 ÷ 2200

TYPICAL CURING PERFORMANCE

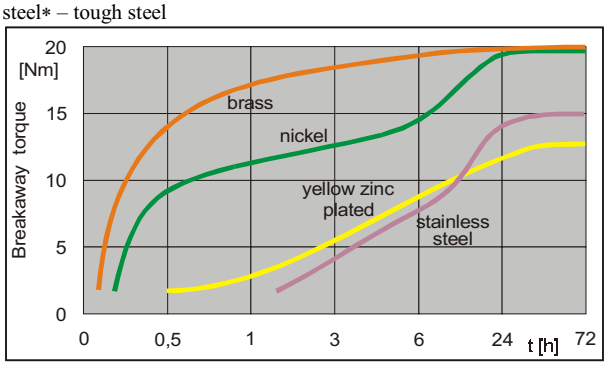
The rate of cure will depend on substrate used, the ambient temperature and the bond gap.

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.

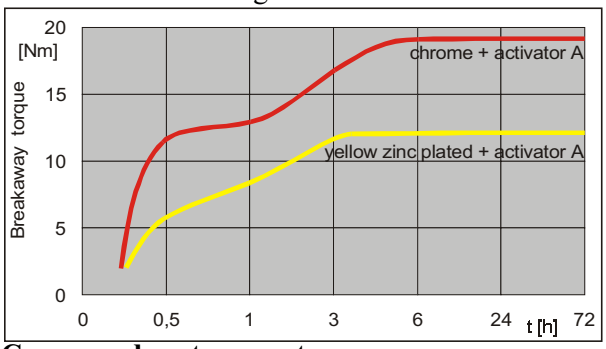


steel* – tough steel



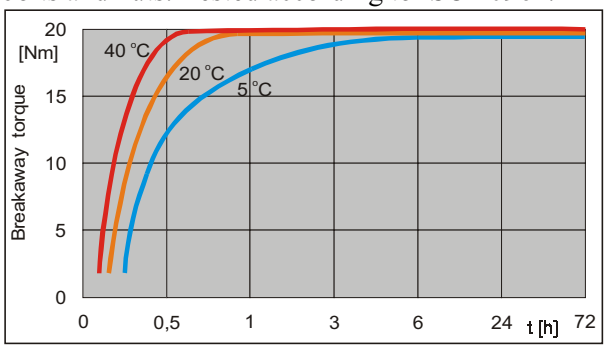
Cure speed vs activating agent

The graph below shows the relative increase in breakaway torque developed with time using activator A. Developed on M10 medium bolts and nuts. Tested according to ISO 10964.



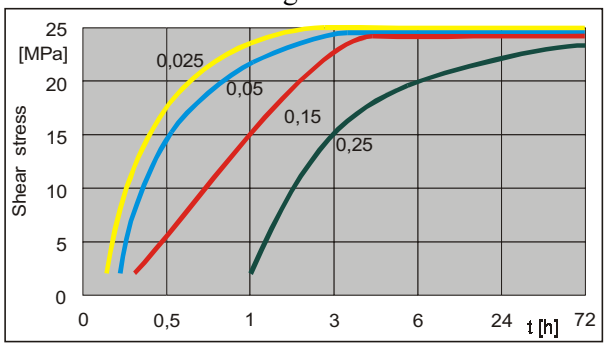
Cure speed vs. temperature

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

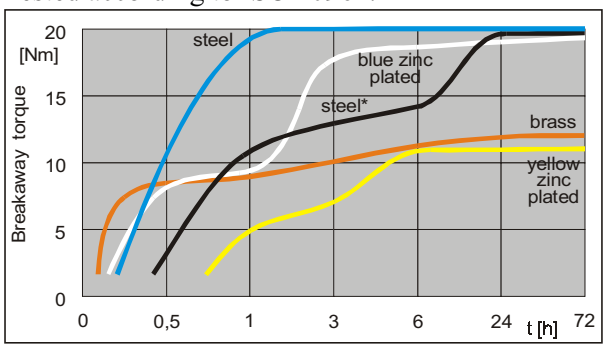
The graph below shows the increase in shear stress developed with time compared to different controlled gaps. Developed on steel pins and collars. Tested according to DIN 54452.



Cure speed (on aluminum) vs. substrate

The graph below shows the relative increase in breakaway torque developed with time compared to various materials. Developed on M10 medium bolts and tapped holes in aluminum alloy.

Tested according to ISO 10964.



steel* – tough steel

PHISICAL PROPERTIES OF CURED MATERIAL

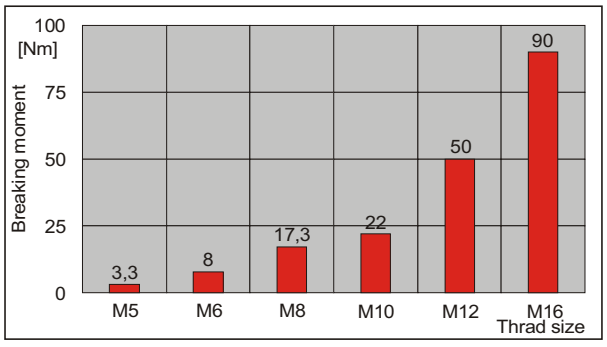
Coefficient of thermal expansion [1/K] ca. **$8x10^{-5}$**
Coefficient of thermal conductivity [W/mK] ca. **0.1**
Specific heat [J/kgK] ca. **300**

PERFORMANCE OF CURED MATERIAL

Breakaway torque [Nm]
[ISO 10964 (3.3)]
Value: **20**
Range: 15-25
Prevail Torque [Nm]
[ISO 10964 (3.5)]
Value: **8**
Range: 6-10
Shear strength [Mpa]
[DIN 54452]
Value: **25**
Range: 15-35
After 24h hardening at 22°C with M10 medium steel nuts and bolts or steel pins and collars.

Breakaway torque vs thread size

The graph below shows the maximum breakaway torque compared to various screw joints. Developed on medium steel bolts and nuts after 72h hardening at 22C. Tested according to ISO 10964.

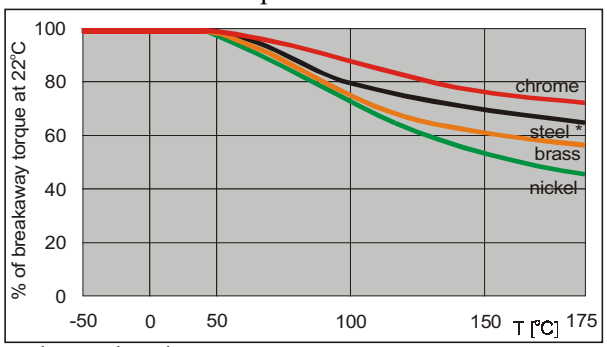


ENVIRONMENTAL RESISTANCE

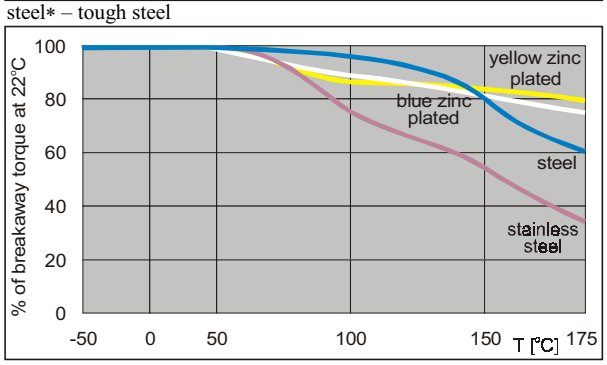
Developed after 72h hardening at 22°C.

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.

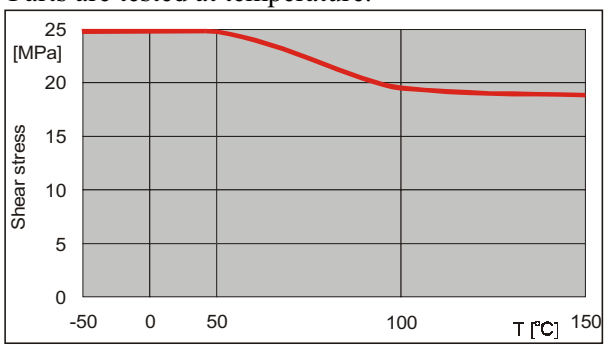


steel* – tough steel



Shear strength at extrusion vs temperature

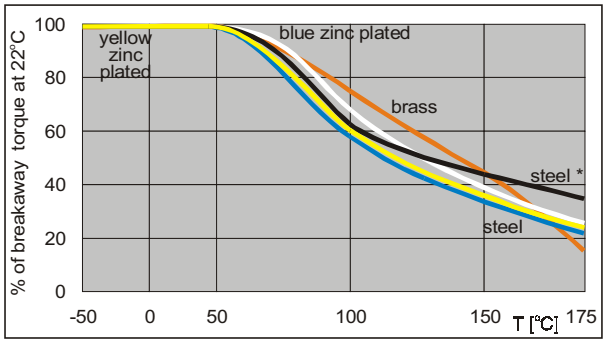
The following graph shows the relative decrease or increase in shear stress developed with temperature. Developed on steel pins and collars.
Tested according to DIN 54452.
Parts are tested at temperature.



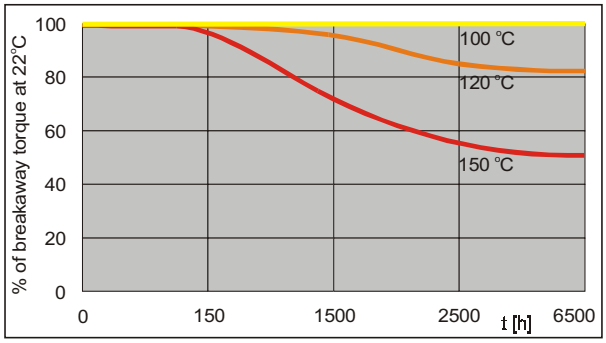
Breakaway torque vs temperature (for aluminum)

The graphic presentation shows the relative decrease or increase in breakaway torque developed with temperature compared to various materials. Developed on M10 medium bolts and

tapped hole at aluminum alloy. Tested according to ISO 10964.
Parts are tested at temperature.



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



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
Developed after 72h hardening at 22°C.
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.
Because of the curing mechanism anaerobic-contact 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.
Stability 18 months.

Instruction for use
The applied surfaces should be cleaned and free of grease. The adhesive should be spread only through the bathing tip. Do not dip screw bolts, metal parts, paste brushes or any other things in the bottle with an adhesive. 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.