

# LOCKING 377 – TECHNICAL DATA SHEET

## PRODUCT DESCRIPTION

Anaerobic adhesives are stable when in contact with oxygen in the air. When the product is Decoupled between two interlocking metal parts and the contact with oxygen ends, the polymerization reaction begins, forming a strong, vibration- and pressure-resistant layer

## PRODUCT USAGE AREA

Thanks to its thixotropic formula, the product is prevented from flowing before joining the parts. It is easily applied to threaded parts and can be easily disassembled with hand tools. Thanks to its special formula, the 5577 Pipe Sealing Element can be used in applications requiring high compressive strength and/or resistance to oils. According to the EN 751-1 standard, it is suitable for H-type metallic thick screw connections. The product gives excellent results in applications that are far Decoupled (wider than 0.5mm).

## TECHNICAL SPECIFICATIONS

|   |
|---|
| <b>Resistance :</b> Medium                  |
| <b>Viscosity:</b> High and thixotropic      |
| <b>Color:</b> Yellow                        |
| <b>Appearance (uncured):</b> Liquid         |
| <b>Basic ingredient:</b> Methacrylate ester |

## PHYSICAL PROPERTIES

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|--|
| <b>Specific gravity Conditions:</b> 22°C: 1.020    |
| <b>Flash point Method:</b> ASTM D56-05: >93°C      |
| <b>Temperature Decoupler:</b> from -50°C to +150°C |
| <b>Corrosion property:</b> Not corrosive           |
| <b>Gap filling:</b> up to 0.5mm                    |
| <b>Viscosity:</b> 50000- 60000 cPs (@20            |

## Room Temperature Curing

The curing times of the adhesive on various surfaces are indicated below. Please note that the results may vary depending on the temperature and the amount of Decoupling between the surfaces to be bonded.

Samples: M10x25 Bolt and suitable nut

Conditions: 22°C

**Curing speed on different surfaces**

The curing speed of the anaerobic adhesive largely depends on what material the surface to be glued is made of. The curing rate that occurs over time is determined by measuring the breakaway torque of the samples of bolts and nuts. The graphs showing the test details and results are given below.

Test method: ISO 10964

Bolt and nut samples

Conditions 22°C

**The curing rate according to the distance between the surfaces**

The distance between the two surfaces to be bonded can seriously affect the curing speed of the adhesive. Dec. The curing rate formed over time was determined by measuring the shear stress on the surface of the sample. The graphs showing the test details and results are given below.

**Physical properties after curing**

|   |                                    |
|---|------------------------------------|
| Coefficient of thermal expansion ( $\alpha$ ) Method: ISO 11359-2 | 9x10 <sup>-5</sup> K <sup>-1</sup> |
| Heat conduction coefficient (k) Method: ISO 8302                  | 0.15 W/(m.K)                       |
| Specific Heat Method: ISO 11357-4                                 | 0.33 kJ/(kg.K)                     |

**24-hour curing in an unloaded assembly**

Test method: ISO 10964 (22OC)

Samples: Different kinds of pins and rings

| Sample type         | Breakaway Torque (TBA) | Prevailing Torque (TP) |
|---------------------|------------------------|------------------------|
| Zinc coated M10     | 12 N.m                 | 2 N.m                  |
| Stainless steel M10 | 10 N.m                 | 2 N.m                  |
| Steel M10           | 15 N.m                 | 4 N.m                  |

**Environmental resistance of the adhesive after curing**

The environmental resistance of the cured adhesive was measured by applying the ISO 10964 preloaded assembly test at different temperatures after curing took place.

**Test method ISO 10964**

Bolt and nut samples: Zinc plated, M10x25

Curing conditions and duration: 22°C, 1 week

Torque test conditions (excluding high temperature resistance test): 22°C

Torque type: Stripping torque (TBL)

**High temperature resistance**

Temperature resistance has been studied at various temperatures. The reference value of "full strength in zinc coating" is taken from the 24-hour curing values given in the previous sections

## **INSTRUCTIONS FOR USE**

- Before joining the male and female parts, clean them with an absorbent cloth or handkerchief to thoroughly clean the cutting oil.
- Apply the adhesive 360 degrees to the first teeth of the pipe connection male and female parts.
- Wipe off the excess product in the direction of the teeth with an absorbent cloth or handkerchief.
- Assemble the parts and leave them at 22- 24°C for 24 hours to make sure that complete curing has taken place.
- To disassemble, use hand tools when separating the joined parts. If disassembly is not possible at room temperature, apply district heating until it reaches 250°C and disassemble while it is hot. Then, if there is any remaining cured adhesive, mechanically clean it and replace the parts with a suitable solvent, (e.g. clear acetone)

## **Storage and shelf life**

Keep the product in its original container at 22°C and do not expose it to direct sunlight. Storage at temperatures less than 5°C and more than 30°C may adversely affect product properties. The product removed from its original container may become contaminated during use, which may affect the adhesion performance and shelf life of the product. Therefore, do not return the contaminated product to its original container. Metsan does not accept responsibility for products that have been contaminated or stored differently from the specified storage conditions. Shelf life: 24 months at 22°C

## **FIRST AID MEASURES**

The product contains methacrylate ester. For more detailed information, please check the Safety before use Please apply to the Information Form (SDS)

## **DISPOSAL INFORMATION**

The product must be disposed of in accordance with official regulations. Do not allow the product to be disposed of together with household garbage.

It is strictly forbidden to mix the product into sewers and underground waters. In such cases, inform the official authorities.

## **TRANSPORTATION INFORMATION**

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| <b>THE APPROPRIATE UN TRANSPORT NAME AND UN NO</b> | <i>There is no hazard class under the ADR legislation.</i> |
| <b>SYMBOL</b>                                      |  |
| <b>TRANSPORTATION HAZARD CLASS</b>                 |  |
| <b>PACKAGING GROUP</b>                             |  |
| <b>CLASSIFICATION CODE</b>                         |  |
| <b>LABELING NO</b>                                 |  |
| <b>HAZARD IDENTIFICATION NO (HIN NO)</b>           |  |
| <b>TUNNEL RESTRICTION CODE</b>                     |  |
|  |  |
|  |  |

**NOTE:**

*For safety information, see the safety data sheet (MSDS).*

*The information has been prepared based on laboratory studies and applications.*

*Our company is not responsible for the problems that may arise from applications made in adverse conditions.*

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### **Akfa Endüstri San. Ve Tic. A.Ş.**

**Adres:**

*Cihangir mah. Güvercin sok. no: 2/22 Aktim 3 İş Merkezi Avcılar İstanbul*

**Tel:**

*0539 688 13 43*