

**Protac**<sup>®</sup>

Engineering Adhesives, Industrial Sealants

TECHNICAL DATA SHEET

Revision number: 50211

Protac 2871

**Protac 2871 Stud Lock – High Strength Anaerobic Threadlocking Compound**

**Product description**

Protac 2871 is a single component, fast curing, high strength (permanent) anaerobic threadlocker. Protac 2871 cures when confined in the absence of air between close-fitting metal surfaces. Protac 2871 is highly resistant to heat, vibrations, water, gases, oils, hydrocarbons and many chemicals.

**Typical applications**

Protac 2871 is particularly suitable for larger threaded fasteners (up to 25mm) and studs and all applications where maximum strength is needed. Protac 2871 prevents corrosion of assembled parts.

**Military Specifications**

MIL-S-46163A Type I Grade K  
MIL-S-22473E Letter Grade CVV

**Properties of material**

Chemical type	Di-Methacrylate
Appearance	Red
Specific Gravity	1.11
Viscosity cPs <sup>1</sup>	500 cps
Breakaway Torque (N.m) <sup>2</sup>	20-40
Typical value (ISO 10964)	28
Prevail Torque (N.m) <sup>2</sup>	21-44
Typical value (ISO 10964)	31
Compressive Shear strength	
Steel pins and collars (ISO 10123)	> 8N/mm <sup>2</sup>
Fixture Time <sup>3</sup>	≤10
Full Cure @20°C (hours)	24
Flash Point (°C)	>100
Shelf Life @ 20°C (months)	24
Max Gap Fill (mm)	0.15
Operating temp. range (°C)	-50 to +150

1 Brookfield RVF, spindle 3, 20 rpm

2 On M10 black oxide steel bolt and M10 bright steel nut, ISO10964

3 ISO 10964

Typical curing speed, % of final strength:-

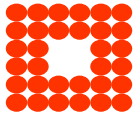
15 mins Finger tight

1 hour~ 60% strength

24 hours 100% strength

**Physical properties**

Coefficient of Thermal Expansion	80x10 <sup>-6</sup>
ASTM D 696, K-1	
Coefficient of Thermal Conductivity	0.10
ASTM C 177, W/(m.K)	
Specific heat, KJ(kg.k)	0.30



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**Chemical Resistance**

Chemical	Temp.	% Initial Strength Retained	
		500 hours	1000 hours
Acetone	22°C	95	90
Ethanol	22°C	100	100
Motor Oil	125°C	95	95
Petrol	22°C	100	100
Brake Fluid	22°C	100	100
Water/Glycol	87°C	90	80

**Cure speed vs. substrate** Cure speed and strength vary according to the substrates. When used on mild steel and brass components anaerobic adhesives will reach full cure faster than more inert materials such as stainless steel and zinc dichromate. Protac AC32 activator may be used to accelerate cure speed.

**Cure speed vs. bond gap** The size of the bond gap greatly affects the speed of cure of anaerobic adhesives. Bond gap varies with thread type and size of the fastener. The larger the gap between threads, the slower the cure speed. Maximum recommended gap for 2871 is 0.15mm

**Cure speed vs. temperature** All figures relating to cure speed are tested at 22°C. Lower temperatures will result in slower cure. Heating the assembled parts accelerates the curing process. Activator AC32 should be used when the temperature is less than 5°C.

**Typical environmental resistance**

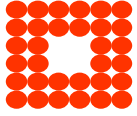
**Hot strength** Protac 2871 is suitable for use at temperatures up to 150°C. At 130°C the bond strength will be ~50% of the strength at 21°C.

**Heat ageing** Protac 2871 retains ~90% full strength when heated to 100°C for 90 days then cooled and tested at 22°C.

**Chemical / Solvent Resistance** Protac anaerobic adhesives exhibit excellent chemical resistance to most oils and solvents including motor oil, leaded petrol, brake fluid, acetone, ethanol, propanol and water. Anaerobic adhesives are not recommended for use in pure oxygen or chlorine lines.

**General information** For safe handling of this product consult the Material Safety Data Sheet.

Anaerobic adhesives only cure in the absence of air and with metal part activation. Adhesive outside the joint will remain uncured and may be wiped away with a cloth.



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2871 is suitable for most medium and coarse- threaded screws, nuts and bolts. Not recommended on certain plastics as stress cracking can sometimes result. Some anti-corrosion chemicals inhibit the cure system in this type of anaerobic. Trials are recommended to establish whether cleaning of the parts is necessary. AC32 Activator may be required on plated parts.

**Directions for use**

Ensure parts are clean, dry and free from oil and grease. Apply adhesive to all engaged threads. Assemble parts and allow to cure. Wipe excess adhesive from outside of joint

**Storage**

Store in a cool area out of direct sunlight. Refrigeration to 5°C gives optimum storage stability.

**Packaging**

Bottles: 50ml and 250ml. Available in bulk for use with dispensing systems.

**Data ranges**

The data contained in this data sheet may be reported as typical value and/or range. Values are based on actual test data and are verified on a regular basis.

**Notes**

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