

PROTAC®

Engineering Adhesives, Industrial Sealants

TECHNICAL DATA SHEET

Revision number: 50211

Protac 2890

Protac 2890 Threadlock – Penetrating / Wicking grade

Product description	Protac 2890 Nutlock is a medium-high strength penetrating grade anaerobic threadlocker. The product cures when confined in the absence of air on close-fitting metal surfaces.
Specification	Military specifications: MIL-S-46163A Type III Grade R Military specifications: MIL-S-22473E Letter Grade AA
Typical applications	Protac 2890 is formulated to be a very low viscosity anaerobic threadlocker. Used mainly to wick into pre-assembled parts. Due to the very low viscosity, 2890 can be used for some interference fit retaining applications. Protac 2890 can also be used as a porosity sealant for cast components.

Properties of material	Chemical type	Di-Methacrylate
	Appearance	Light green
	Specific Gravity	1.07
	Viscosity cPs(Range) ¹	7-12
	(Typical value)	10
	Breakaway Torque (N.m) ³	7-21
	Typical value	17
	Prevail Torque (N.m) ³	26-44
	Typical value	35
	Fixture Time ³	≤15
	Full Cure @ 20°C (hours)	24
	Flash Point (°C)	>100
	Shelf Life @ 20°C (months)	12
	Max Gap Fill (mm)	-
Operating temp. Range (°C)	-50 to +150	

¹ISO 3104/3105

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

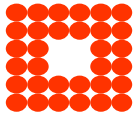
³ISO 10964

Typical curing speed, % of final strength:-

15 mins	Finger tight
1 hour	~ 50% strength
24 hours	100% strength

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.
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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 fill for 2890 is 0.15mm.
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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 2890 is suitable for use at temperatures up to 150°C. At 130°C the bond strength will be ~30% of the strength at 21°C.

Heat ageing Protac 2890 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.

Chemical	Temp.	% Initial Strength Retained	
		500 hours	1000 hours
Acetone	22°C	95	95
Ethanol	22°C	95	95
Motor Oil	125°C	85	50
Petrol	22°C	90	90
Brake Fluid	22°C	90	85
Water/Glycol	87°C	90	90

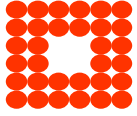
General information For safe handling of this product consult the Material Safety Data Sheet.

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.

2890 is suitable for most for most standard diameter, fine to medium 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.



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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	The information contained herein is produced in good faith and is believed to be reliable but is for guidance only. Novachem Ltd. and its agents cannot assume liability or responsibility for results obtained in the use of its product by persons whose methods are outside or beyond our control. It is the user's responsibility to determine the suitability of any of the products and methods of use or preparation prior to use mentioned in our literature and furthermore the user's responsibility to observe and adapt such precautions as may be advisable for the protection of personnel and property in the handling and use of any of our products.