Scotch-Weld™
Retaining Compound Anaerobic Adhesives
RT09 • RT20G • RT38 • RT41 • RT48

Technical Data **November 2016**

Product Description	3M™ Scotch-Weld™ Retaining Compound Anaerobic Adhesives are one-component anaerobic adhesives designed to secure cylindrical metal assemblies such as bearings on shafts, bushings, sleeves, housings, and keyways. They prevent loosening, corrosion and leakage caused by shock and vibration.
Specific Features	• **3M™ Scotch-Weld™ General Purpose Retaining Compound RT09** is a general purpose, medium strength, removable, low viscosity retaining compound that prevents spin-out for rigid assemblies such as locking bushings a sleeves in housings or on shafts, bonding rotors to shafts, and as an augment to press fits. • **3M™ Scotch-Weld™ High Temperature Retaining Compound RT20G** is a very high viscosity adhesive for bonding cylindrical parts, to give high strength bonds. RT20G is designed to augment the strength of slip fit assemblies and for use on loose-fitting or worn parts, where larger gap fill is required. It is designed for high service temperature applications (up to 400F, intermittent exposure). • **3M™ Scotch-Weld™ High Strength Retaining Compound RT38** is high viscosity adhesive for bonding cylindrical parts, to give very high strength bonds. Typical applications include locking sleeves onto shafts. RT38 is designed to augment the strength of press fit and slip fit assemblies. Once applied, parts slip together easily, lubricated by the adhesive. RT38 prevents corrosion of assembled parts. • **3M™ Scotch-Weld™ Bearing Mount Retaining Compound RT41** is a medium strength, low viscosity retaining compound, for bonding cylindrical parts, with controlled strength to allow disassembly for servicing and bearing re-use. It is also designed to augment the strength of press fit assemblies. • **3M™ Scotch-Weld™ High Strength Retaining Compound RT48** is a medium viscosity, high strength retaining adhesive that is formulated to be fast curing and develop high strength quickly. It will withstand higher service temperature than standard products. RT48 cures when confined in the absence of air between close-fitting metal surfaces. Typical applications include mounting gears and motors on the shaft. RT48 is designed to augment the strength of press fit assemblies. Once applied, parts slip together easily, lubricated by the adhesive.

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Typical Uncured Physical Properties

Note: The following technical information and data should be considered representative or typical only and should not be used for specification purpose

	RT09	RT20G	RT38	RT41	RT48
Chemistry	Dimethacrylate				
Color	Green	Green	Green	Yellow	Green
Appearance	Liquid	Liquid	Liquid	Liquid	Liquid
Viscosity (cP)	90 - 140 [1]	10,000-30,000 [2] 5,000-10,000 [3]	1,600-3,300 [4]	400-800 [5]	400-800 [6]
Fixture time (min)	25 [a] (≤35) [b]	10 [a] (≤15) [b]	15 [a] (≤20) [b]	25 [a] (≤30) [b]	15 [a] (≤20) [b]
Full Cure time (hours)	24	24	24	24	24

[1] Brookfield Viscometer spindle LVF#1 at 12 rpm; [2] Brookfield Viscometer spindle RTV#4 at 2.5 rpm
[3] Brookfield Viscometer spindle RTV#4 at 20 rpm; [4] Brookfield Viscometer spindle #3 at 20 rpm
[5] Brookfield Viscometer spindle #2 at 20 rpm; [6] Brookfield Viscometer spindle RTV#2 at 20 rpm
[a] Average time; [b] Range; [c] Not available in North and South Americas

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Typical cured Physical Properties

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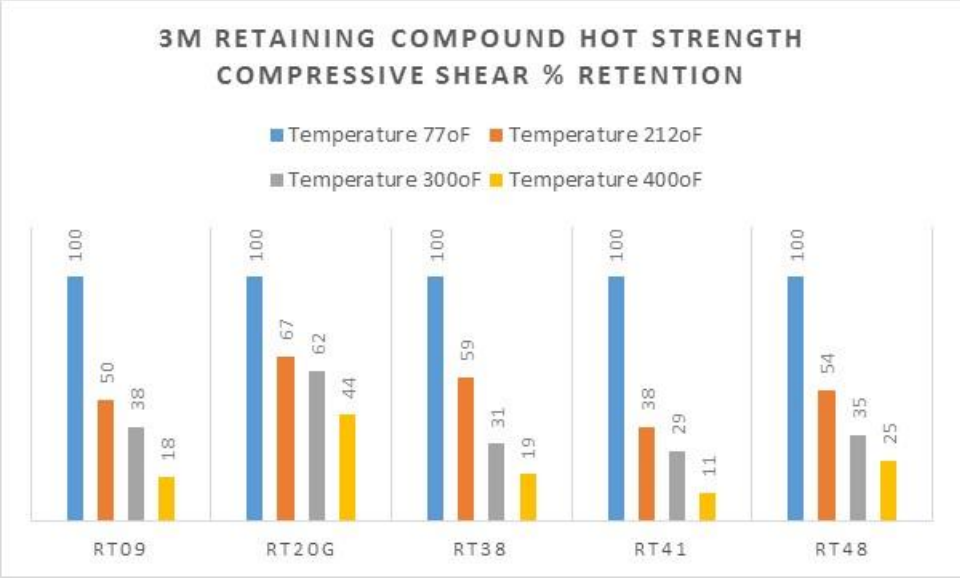
Breakaway* Torque (in.lb)	230[a] (≥175)[b]	225[a] (195-425)[b]	275[a] (175-440)[b]	90[a] (60-130)[b]	195[a] (160-350)
Prevailing* Torque (in.lb)	260[a] (≥220)[b]	305[a] (140-440)[b]	285[a] (90-485)[b]	90[a] (70-105)[b]	300[a] (95-400)
Compressive Shear (psi)**	3770[a]	3475[a]	5300[a]	2950[a]	4970[a]
Temperature Range (°F)	-65 to 300	-65 to 400	-65 to 300	-65 to 300	-65 to 300

*Reference ISO 10964 3/8 – 16" steel nuts and bolts. To convert to (N.m) divide (in.lb) by 8.851.
** Reference ISO 10123 Steel pins (grit blasted) and collars
[a] Typical value; [b] Range

Hot Strength (measured at temperature)



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Handling Information

Directions for Use:

3M™ Scotch-Weld™ Retaining Compounds Anaerobic Adhesives are not recommended for use on most plastics due to potential cracking of plastic parts. Also, they are not recommended for use in piping systems that contain pure oxygen or an oxygen-rich environment, chlorine, or strong oxidizing substances.

For Assembly:

1. Ensure parts are clean, dry and free from oil, grease and dirt. For best results, clean and dry parts with solvent or 3M™ Scotch-Weld™ Activator. (Activator can also be used on inactive surfaces or to accelerate the cure on active surfaces.) Note: Use of 3M™ Scotch-Weld™ Activator may reduce bond strength depending on substrates and gap. Testing is recommended to evaluate the effect.
2. If not sure of surface type, always use activator. Refer to Material surface Activity and Cure Speed section for more information.
3. Avoid touching the metal surfaces with the bottle tip since the metal ions may react with the adhesive upon contact and eventually may clog the bottle tip
4. Apply a bead of adhesive onto the shaft and inside the collar where the contact area will finally be assembled. For larger parts use more adhesive. Assemble parts and rotate to spread adhesive evenly around contact area

Handling Information

For Assembly:

5. Allow assemblies to set for sufficient time so that handling strength or full cure will occur before further processing or testing.

For Disassembly:

Apply localized heat (approximately 490ºF / 254ºC) to bonded parts then disassemble while parts are still hot. Use extreme caution when working with heat sources (e.g. heat gun, flame, etc.)

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Material Surface Activity and Cure Speed	Active (Fast cure)	Inactive (Slow cure)
	• Brass • Bronze • Commercial aluminum • Copper • Iron • Kovar® • Manganese • Monel® • Nickel	• Anodized Aluminum • Cadmium • Chemical black oxide • Galvanized steel • Gold • Inconel® • Magnesium • Magnetite Steel • Plated parts • Pure aluminum • Silver • Stainless Steel • Zinc

Storage	Store product in cool, dry area out of direct sunlight
Shelf Life	3M™ Scotch-Weld™ Retaining Compound Anaerobic Adhesives have a shelf life of 12 months when stored at 60º to 80ºF (16º to 27º C) in the original unopened container.
Precautionary Information	Refer to Product Labe and Material Safety Data Sheet for health and safety information before using this product. For additional health and safety information, call 1-800-364-3577 or (651) 737-6501.

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Technical Information	The technical information, recommendations and other statements contained in this document are based upon tests or experience that 3M believes are reliable, but the accuracy or completeness of such information is not guaranteed.
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ISO 9001:2000

This product was manufactured under a quality system registered to ISO 9001:2000 standards.

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