



Scotch-Weld™

Pipe Sealant Anaerobic Adhesives

PS65 • PS67 • PS92 • HP45 • HP54 • HP69

Technical Data

March, 2010

Product Description

3M™ Scotch-Weld™ Pipe Sealant Anaerobic Adhesives are one-component anaerobic sealants that cure and seal hydraulic and pneumatic pipes and fittings to withstand high temperatures and pressures.

Features

- 3M™ Scotch-Weld™ General Purpose Pipe Sealant PS65 is a general purpose, low to medium breakaway torque strength paste pipe sealant. It is formulated to lock and seal medium to coarse straight and tapered pipe threads on pipes of diameter from approximately 5/8" to 3". It is used for applications that require easy disassembly.
- 3M™ Scotch-Weld™ Stainless Steel High Temperature Pipe Sealant PS67 is a fast cure, low breakaway torque strength, high temperature paste pipe sealant for metal connections in applications such as pressure vessels, air compressors, hydraulic, and pneumatic systems. It works on inactive surfaces (such as stainless steel) and provides an almost instant low pressure seal. A high pressure seal results when the bond is fully cured.
- 3M™ Scotch-Weld™ Slow Cure High Temperature Pipe Sealant PS92 is a slow cure, medium breakaway torque strength, high temperature paste sealant for most hydraulic, pneumatic, oil, water, and gas connections. It provides an almost instant seal at moderate pressure, but also allows realignment of assembled parts up to 24 hours later. It is designed for sealing tapered and parallel threaded components.
- 3M™ Scotch-Weld™ Hydraulic Pneumatic Sealant HP45 is a low breakaway torque strength, medium viscosity liquid sealant for most high pressure hydraulic and pneumatic fittings. It has excellent solvent resistance.
- 3M™ Scotch-Weld™ Refrigerant Hydraulic Sealant HP54 is a liquid sealant typically used in refrigeration systems. It has excellent chemical resistance and a high breakaway torque strength.
- 3M™ Scotch-Weld™ Low Viscosity Air / Hydraulic Sealant HP69 is a low viscosity liquid sealant especially suited for fine-threaded air and hydraulic fittings. It has a fast fixture time and excellent solvent resistance.

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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 purposes.

	3M™ Scotch-Weld™ Pipe Sealant Anaerobic Adhesives					
	PS65	PS67	PS92	HP45	HP54	HP69
Color	White	White	White	Purple	Red	Brown
Chemistry Type	Dimethacrylate	Dimethacrylate	Dimethacrylate	Dimethacrylate	Dimethacrylate	Dimethacrylate
Appearance	Paste	Paste	Paste	Liquid	Liquid	Liquid
Viscosity (cps)	150,000 - 450,000 ¹	350,000 - 900,000 ¹	200,000 - 500,000 ²	12,000 - 16,000 ³	2,200 - 2,800 ⁴	350 - 500 ⁵
Fixture Time (min)	2 hours	15 - 30	10 - 30	4 hours	4 hours	10 - 25
Fixture Time with Activator (min)	< 10	< 10	< 10	< 30	< 30	< 10
Full Cure Time (hr)	24	24	24	24	24	24

¹ Brookfield RVT 'T'-spindle D @ 2.5 rpm and 25°C.

² Brookfield T-bar E @ 5 rpm and 25°C.

³ Brookfield RVT #3 spindle @ 2.5 rpm and 25°C.

⁴ Brookfield LVF #3 spindle @ 20 rpm and 25°C.

⁵ Brookfield RVT #3 spindle @ 2.5 rpm and 25°C.

Typical Cured Physical Properties

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	3M™ Scotch-Weld™ Pipe Sealant Anaerobic Adhesives					
	PS65	PS67	PS92	HP45	HP54	HP69
Color	White	White	White	Purple	Red	Brown
Max Pipe Diameter	3"	3"	3"	2"	3"	2"
Breakaway Torque (in.lb)⁴	18 - 70	18 - 35	40 - 60	8 - 24	240	37 - 62
Temperature Range (°F)	-65 to 300	-65 to 400	-65 to 400	-65 to 300	-65 to 300	-65 to 300

⁴ Reference ISO 10964.

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Handling Information

Directions for Use

Not recommended for use on most plastics due to potential cracking of plastic parts. Also, not recommended for use in piping systems that contain pure oxygen or 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 a 3M™ Scotch-Weld™ Anaerobic Activator. (Activator can also be used on inactive surfaces or to accelerate the cure on active surfaces.)

Note: Use of a 3M™ Scotch-Weld™ Activator with 3M™ Scotch-Weld™ Pipe Sealant Anaerobic Adhesives 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. Apply sealant onto the second and third threads (not the first thread) of the male fitting so as to avoid introducing uncured sealant into the system. (However, should uncured sealant get into the piping system, it will not cure or cause blockage and can be flushed out.) 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. Spread adhesive evenly around the male fitting.
5. Assemble parts and tighten as required.
6. Allow assemblies to set for sufficient time so that handling strength or full cure will occur before further processing or testing.

For Disassembly

1. Loosen or remove with regular hand tools.
2. If hand tools do not work due to the assembled parts being well tightened, apply localized heat (approximately 490°F) to the bonded parts and disassemble while parts are still hot. Use extreme caution when working with heat sources (e.g. heat gun, flame, etc.).

Material Surface Activity and Cure Speed

Active (Fast) ←	←————→	→ Inactive (Slow)
<ul style="list-style-type: none"> • Brass • Bronze • Commercial aluminum • Copper • Iron • Kovar® • Manganese • Monel® • Nickel 		<ul style="list-style-type: none"> • Anodized aluminum • Cadmium • Chemical black oxide • Galvanized steel • Gold • Inconel® • Magnesium • Magnetite steel • Plated parts • Pure aluminum • Silver • Stainless steel • Zinc

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Storage	Store product in cool, dry area out of direct sunlight.
Shelf Life	3M™ Scotch-Weld™ Pipe Sealant Anaerobic Adhesives have a shelf life of twelve months when stored at 60° to 80°F (16° to 27°C) in the original unopened container.
Precautionary Information	Refer to Product Label 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.
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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This product was manufactured under a quality system registered to ISO 9001:2000 standards.



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