

R-27705

Sprayable Neoprene Contact Adhesive

A high-quality, fast-drying, sprayable polychloroprene contact adhesive formulated to produce strong, flexible permanent bonds on a wide range of porous and non-porous substrates. Designed for soft-seam bonding of wetsuit rubber and similar closed-cell neoprene foam, and for general industrial bonding applications where spray application, even film build, and flexible bond lines are required.

PRODUCT DESCRIPTION

R-27705 is a solvent-based, sprayable contact adhesive built on a neoprene (polychloroprene) elastomer system with a balanced aromatic/ketone/aliphatic solvent blend. The elevated toluene content keeps the neoprene swollen during the bonding window, producing soft, flexible, integrated seams rather than hard bond lines. This makes R-27705 particularly well suited to wetsuit seam bonding and similar applications where the finished bond must flex repeatedly without stiffening the adjacent rubber.

R-27705 bonds rubber to rubber, rubber to metal, wood, particle board, decorative laminates, polystyrene bead board, and many other substrates. After application to both surfaces, the adhesive is allowed to flash off until tacky to the touch but non-transferring to the finger. The substrates are then mated with sufficient pressure to form a strong, permanent bond.

TYPICAL APPLICATIONS

Wetsuit seam bonding

Closed-cell neoprene foam assembly

Rubber-to-metal spray bonding

Decorative laminate work

Polystyrene bead board assembly

Production spray bonding

TYPICAL PHYSICAL PROPERTIES

Appearance	Black liquid	Application Method	Spray (preferred); brush or roller
Base Polymer	Polychloroprene (neoprene)	Coverage (typical)	200–275 ft ² /gal, two-surface
Solvent System	Aromatic / ketone / aliphatic blend	Evaporation Rate	Faster than n-butyl acetate
Viscosity	350 cP ± 50 (Brookfield)	Service Temperature	–20 °F to +200 °F
Non-volatile Content (solids)	20% ± 2% by weight	Storage Temperature	40–90 °F, avoid freezing
Weight per Gallon	6.80 lb/gal	Shelf Life	12 months from date of manufacture, unopened
VOC Content (as packaged)	425 g/L	Packaging	Gallon (4 per case) and 5-gallon pail
Flash Point	–20.0 °F (–28.9 °C) closed cup		

APPLICATION PROCEDURE

SURFACE PREPARATION

All surfaces must be clean, dry, and free of dust, oil, grease, release agents, frost, and standing moisture. Rubber and neoprene foam substrates should be wiped with a compatible solvent such as MEK or acetone immediately prior to adhesive application. Smooth non-porous substrates benefit from light abrasion to improve mechanical keying. Freshly cut or skived rubber surfaces should be bonded within a short window to avoid surface contamination.

STANDARD APPLICATION — OPTIMUM CONDITIONS

For best results, condition adhesive and substrates to 65–85 °F (18–29 °C) prior to application. Stir adhesive thoroughly before use; R-27705 contains suspended carbon black and may settle during storage. Apply a thin, even coat to *both* mating surfaces using suitable spray equipment (HVLP or conventional air-spray). For smaller work or touch-up, brush or short-nap roller may be used. Allow to flash-off until aggressively tacky but no longer wet to the touch and non-transferring to the finger (typically 8–15 minutes at 70 °F, 50% RH). Mate surfaces with firm, uniform pressure across the full bond area. For wetsuit seam work, hand pressure or a roller is typically sufficient; for rigid-substrate work, higher pressure improves bond strength. Bond strength develops rapidly; full cure in 24 hours.

SPRAY EQUIPMENT GUIDANCE

R-27705 may be sprayed through conventional siphon, gravity-feed, or HVLP equipment. A fluid tip in the 1.4–1.8 mm range is typical. Atomizing air pressure should be adjusted to produce a uniform fan without excessive overspray. Use non-sparking, grounded equipment; see Section 7 of the SDS for required electrical and static-discharge precautions. Clean equipment with MEK, acetone, or 3M Citrus Base Cleaner immediately after use.

COLD-WEATHER APPLICATION

R-27705 is suitable for application at substrate and ambient temperatures *below 65 °F* when the procedure below is followed.

APPLICATION BELOW 65 °F

The neoprene/solvent system in R-27705 remains fully functional at reduced application temperatures. At temperatures below 65 °F, solvent evaporation and tack development slow in proportion to temperature; open time extends and an extended flash-off period is required before mating surfaces. R-27705's balanced solvent blend (with elevated toluene) produces moderate flash-off times with a broader, more forgiving open window than hexane-heavy formulations. When the procedure below is followed, final bond strength and seam flexibility are not reduced relative to application at optimum temperature.

SUBSTRATE / AMBIENT TEMPERATURE	MINIMUM FLASH-OFF TIME	TIME TO HANDLING STRENGTH	TIME TO FULL CURE
65–85 °F (optimum)	8–15 min	45 min – 1 hour	24 hours
55–65 °F	15–28 min	1.5–2.5 hours	36 hours
45–55 °F	28–50 min	3–5 hours	48 hours
40–45 °F (minimum)	50–75 min	7–10 hours	72 hours

Values are typical and assume still-air conditions at 50% RH. Spray application on thin films typically falls at the lower end of each flash-off range; heavier films require the upper end. Verify aggressive tack by light finger contact before mating; the adhesive should feel tacky but leave no transfer to the finger.

COLD-WEATHER PROCEDURE

- 01 Condition the adhesive.** Store R-27705 at 65–80 °F for a minimum of 24 hours prior to use. Stir thoroughly after conditioning to redisperse any settled carbon-black pigment. Cold adhesive is more viscous, which can affect spray fan quality.
- 02 Verify substrate condition.** Substrates must be dry and free of frost, condensation, and surface moisture. A wipe with a clean dry cloth should leave no visible dampness.
- 03 Apply a thin, even coat to both surfaces.** Do not apply a heavy coat to compensate for cold temperatures; heavy films extend flash-off time disproportionately and can trap solvent at the bond line, producing soft or delayed bonds.
- 04 Extend flash-off time per the table above.** Verify aggressive tack by light finger contact before mating. If finger transfer occurs, allow additional flash-off.
- 05 Mate surfaces with firm, uniform pressure.** A hand roller or equivalent pressure applicator should be used across the full bond area. Initial contact strength is reduced at lower temperatures; support flexible assemblies until handling strength is reached.
- 06 Protect the bond during cure.** Do not subject the bond to shear, peel, or service loads until the time to full cure shown above has elapsed. Protect from rain, frost, and contaminants throughout the cure period.

I 3M COMPARABLE REFERENCE

The following 3M product has a comparable chemistry, application method, and performance envelope to R-27705. This reference is provided to assist specifying engineers and purchasing personnel in identifying a functionally similar product within the 3M catalog.

HANNA / RUBATEX

R-27705

Sprayable neoprene contact adhesive for soft-seam wetsuit bonding and general industrial spray applications.

3M COMPARABLE

3M 1357 (sprayable)

Scotch-Weld Neoprene High-Performance Contact Adhesive 1357; sprayable neoprene for laminations, rubber-to-metal bonding, and flexible substrates.

***Disclaimer:** 3M and Scotch-Weld are trademarks of 3M Company. This cross-reference indicates comparable chemistry and general performance envelope; it does not represent a certification of drop-in equivalence. Users switching between manufacturers should conduct independent adhesion and performance testing on representative substrates before committing to production use. Hanna Rubber Company is not affiliated with or endorsed by 3M Company.*

I LIMITATIONS

- Do not apply below 40 °F or above 100 °F substrate temperature.
- Do not apply to wet, frozen, or contaminated surfaces.
- Not recommended for use on EPDM, silicone rubber, or plasticized vinyl without adhesion testing.
- Not recommended for continuous immersion service or for bonds subject to sustained peel loading.
- Product is flammable. See Safety Data Sheet (SDS) prior to use for handling, storage, and PPE requirements.

I STORAGE & SHELF LIFE

Store in original unopened containers at 40–90 °F, away from heat, sparks, and direct sunlight. Do not allow product to freeze. Rotate stock on a first-in, first-out basis. Shelf life is 12 months from the date of manufacture in an unopened, sealed container. Date of manufacture is stamped on each container.

I HEALTH & SAFETY

R-27705 is a Class 3 flammable liquid (UN 1133, PG II). Flash point –20.0 °F closed cup. Contains acetone, hexane, and toluene. The wider flammable vapor range (1.68–9.29%) and low flash point relative to standard contact cements require heightened attention to ventilation and ignition-source control. Spray application substantially increases airborne vapor concentration — use only in well-ventilated areas with appropriate respiratory, skin, and eye protection, and use grounded, non-sparking spray equipment. Keep away from heat, sparks, open flames, and hot surfaces — no smoking. Refer to the current R-27705 Safety Data Sheet for complete hazard information, exposure limits, first-aid measures, and regulatory data prior to use.

The data presented in this document represents typical values based on material of standard quality produced under standard conditions. It is offered in good faith as information only and not as a product specification. No warranty, express or implied, is

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*made. Each user is responsible for determining suitability for the intended end use.
Users should conduct their own adhesion testing for critical applications and should
verify that the product, as supplied, meets the requirements of the specifying authority.*

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