

Consumer Solutions

Cleaners Remove Silicone Deposits from Industrial Equipment and Surfaces

Case Study: DOWSIL™ DS-2025 Silicone Cleaning Solvent and DOWSIL™ DS-1000 Aqueous Silicone Cleaner

PROJECT SNAPSHOT

Demonstrate the removal of cured and uncured silicone from substrates.

Dow Products Used:

DOWSIL™ DS-2025 Silicone Cleaning Solvent

DOWSIL™ DS-1000 Aqueous Silicone Cleaner

Figure 1



Figure 2



Figure 3



Silicones are widely used in various products and in manufacturing processes, and good cleaning practices can help you reduce the risk of microbial or chemical contamination in finished products, reduce the likelihood of buildup-related equipment failures, and contribute to good industrial hygiene and worker safety.

Dow offers two products for the easy removal of silicone deposits on tools, kettles, bottling lines, pipes, manufacturing equipment, floors and other surfaces: DOWSIL™ DS-2025 Silicone Cleaning Solvent for removing cured silicones and DOWSIL™ DS-1000 Aqueous Silicone Cleaner for removing uncured silicones.

Using DOWSIL™ DS-2025 Silicone Cleaning Solvent to remove cured silicone

To demonstrate the cleaning effect of DOWSIL™ DS-2025 Silicone Cleaning Solvent, a plastic pipe was coated with DOWSIL™ RSN-0749 Resin – a curable silicone that, on evaporation of the cyclomethicone, forms a cured film of high-molecular-weight silicone resin. The silicone was applied to the outside of the pipe rather than the inside (Figure 1) so the cleaning can be seen more effectively.

The pipe was left to stand in DOWSIL™ DS-2025 Silicone Cleaning Solvent overnight at room temperature (Figure 2). It was then rinsed with water and dried to yield a clean pipe (Figure 3).

Recommended procedure for using DOWSIL™ DS-2025 Silicone Cleaning Solvent to remove cured silicone from industrial equipment:

1. Silicone digestion

- Drain tanks and lines from a maximum of residue and water (0.5% maximum).
- Fill tanks and lines with DOWSIL™ DS-2025 Silicone Cleaning Solvent.
- Ventilation is required. A nitrogen blanket is not required but may be used as an additional safety measure if working at 60°C.
- Recirculate DOWSIL™ DS-2025 Silicone Cleaning Solvent at room temperature (or up to 60°C) until dissolution of residue is effective. Typically, this takes one to four hours.
- Note that no impact of DOWSIL™ DS-2025 Silicone Cleaning Solvent on stainless steel 304 and 316 has been detected. Additionally, no impact

has been detected on Teflon, Viton, nitrile, polyethylene, polypropylene or EPDM gaskets, seals and joints, as well as ABS and PET. However, DOWSIL™ DS-2025 Silicone Cleaning Solvent will affect nylon, butyl rubber, polyurethane and silicone gaskets, seals and joints.

2. Degreasing

- Drain DOWSIL™ DS-2025 Silicone Cleaning Solvent from unit and refill container for next use.
- Start CIP cleaning with 10% DOWSIL™ DS-1000 Aqueous Silicone Cleaner to solubilize and remove solvent residue.

3. Sanitization

- Perform final sanitization according to customer standard practice.

Using DOWSIL™ DS-1000 Aqueous Silicone Cleaner to remove uncured silicone

To demonstrate the cleaning effect of DOWSIL™ DS-1000 Aqueous Silicone Cleaner, some XIAMETER™ PMX-200 Silicone Fluid 350 cSt – a typical uncured silicone – was poured onto a floor (Figure 4).

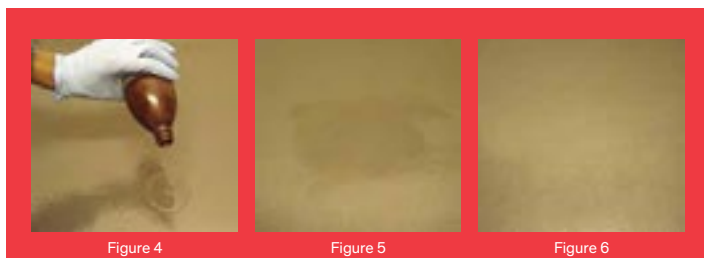


Figure 4

Figure 5

Figure 6

The bulk of the spill was cleaned up using paper tissue to leave a residue of silicone on the floor (Figure 5). The floor was then cleaned with a 10% aqueous solution of DOWSIL™ DS-1000 Aqueous Silicone Cleaner to give a clean surface (Figure 6).

Recommended procedure for using DOWSIL™ DS-1000 Aqueous Silicone Cleaner to remove uncured silicone from industrial equipment:

1. Degreasing

- Drain any residues from unit.
- Fill unit with a 10% aqueous solution of DOWSIL™ DS-1000 Aqueous Silicone Cleaner.
- Heat up to 80°C and recirculate using the CIP cleaning procedure to solubilize and remove silicone residues. Recirculate through piping and spray nozzle-ball where relevant.

2. Sanitization

- Drain off DOWSIL™ DS-1000 Aqueous Silicone Cleaner solution.
- Perform final sanitization according to customer standard practice.

Further information

To request samples of DOWSIL™ DS-2025 Silicone Cleaning Solvent or DOWSIL™ DS-1000 Aqueous Silicone Cleaner or to obtain contact information for your local sales/technical representatives or distributor, visit consumer.dow.com.



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