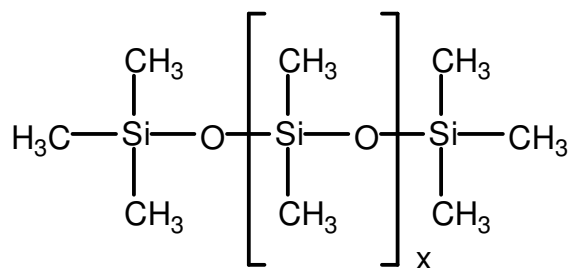


Protection and conditioning: WACKER silicones for the polishes industry

WACKER SILICONES provides an extensive range of active ingredients for the formulation of high-quality polishes. **Standard silicone fluids, organomodified silicone fluids, silicone resins/waxes** and their **o/w emulsions** give your polishes the right property profile for end users. WACKER silicones make rubbing out easier, enhance gloss and color depth and give surfaces long-lasting protection from environmental influences.

1. Polydimethylsiloxanes from the range of WACKER® AK silicone fluids

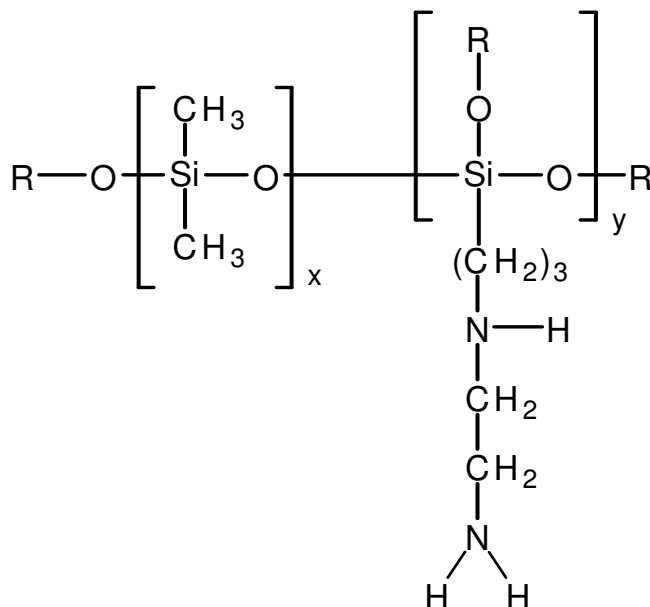


Standard silicone fluids from the WACKER® AK range are **available in a wide range of viscosities**. Polishes are best formulated from silicone fluids in a viscosity range of between $100 \text{ mm}^2 \text{ s}^{-1}$ and $60,000 \text{ mm}^2 \text{ s}^{-1}$.

WACKER® AK silicone fluids **improve polishability**, enhance **shine** and **color depth** and are characterized by **effective water repellency**. This wide range of properties enables WACKER® AK silicone fluids to be used in practically every car and household care application.

The following empirical values will help you **choose the optimum viscosity** for polishes.

- WACKER® AK silicone fluids at the lower end of the viscosity range (100 to $1,000 \text{ mm}^2 \text{ s}^{-1}$) spread and lubricate better, whereas those at the upper end ($1,000$ to $60,000 \text{ mm}^2 \text{ s}^{-1}$) yield superior gloss and depth of shade.
- Experience has shown that optimum polishability and gloss can be achieved by using a mixture of a low-viscosity silicone fluid (3-5 parts) and a high-viscosity silicone fluid (1 part). Pure solvent-based paint conditioners are an exception to this rule. In this case, a higher-viscosity fluid (between $5,000 \text{ mm}^2 \text{ s}^{-1}$ and $12,500 \text{ mm}^2 \text{ s}^{-1}$) is recommended, since polishability is also optimally enhanced.

2. Aminofunctional polydimethylsiloxanes: WACKER® L 654, L 655 and L 656


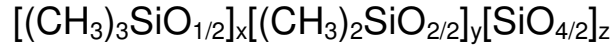
We offer aminofunctional silicone fluids containing various amounts of organic amino-alkyl functional groups in reactive and/or non-reactive variants.

- In the presence of humidity, **reactive grades** crosslink to form an insoluble polymer film with high **detergent resistance** and effective **protection**.
- **Non-reactive grades** are characterized by excellent **active-ingredient and storage stability** and do **not result in unwanted build-up**, even with frequent use.

Like our standard WACKER® AK silicone fluids, aminofunctional silicone fluids **improve polishability**. However, they also offer **greater depth of shade** and improve **long-term water-repellency**. Thanks to these properties, aminofunctional silicone fluids **are recommended** for **car polishes**.

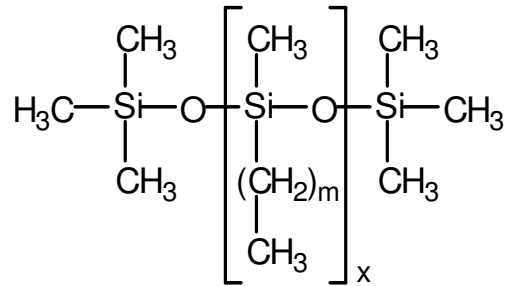
The **following rules** relating to water repellency and polishability will **help you choose the right** aminofunctional silicone fluids for the formulation of polishes.

- Water repellency and polishability increase in the following order: WACKER® L 654, through L 656 to L 655.
- Experience has shown that excellent polishability, gloss, depth of shade and good detergent stability can be achieved by combining WACKER® L 654 and L 656.

3. WACKER® TPR silicone resin


In combination with standard WACKER® AK silicone fluids, the **non-reactive** WACKER® TPR silicone resin yields a **water-repellent protective film** of specified **hardness** that is much more resistant than films from standard silicone fluids or aminofunctional silicone fluids. This property makes WACKER® TPR the preferred product for **high-quality car polishes**.

WACKER® TPR can replace organic wax in car polishes. Thanks to its fluid consistency, it enables high-quality polishes to be produced at room temperature without the need for expensive equipment to handle wax melts.

4. Silicone wax WACKER® W 23


Silicone waxes offer by far the most effective **long-term water repellency** compared to standard silicone fluids, aminofunctional silicone fluids and silicone resins. Our silicone waxes are especially suitable for **very high-quality car polishes** and conditioners (e.g. car polishes and hard waxes) **and leather polishes**.

5. Silicone emulsions: WACKER® E 10, E 32, E 37, E 1044, E 1656 and TNE 50

For polish/conditioner manufacturers without a proprietary emulsifying process, we additionally offer the most important active ingredients as o/w emulsions. Our E 10 and E 1044 grades are **non-ionic** emulsions of standard silicone fluids. The base oil of the non-ionic E 1656 is an aminofunctional silicone fluid. TNE 50 is based on an alkyl/aralkyl functional silicone fluid. Emulsion E 37 (anionic) is silicone-resin based. E 32 is a non-ionically stabilized silicone wax emulsion.

Our **silicone emulsions** are basically **suitable** for the **same applications** as the **silicone active ingredients they contain**. Particularly noteworthy are emulsions E 32 and E 37, which were developed specifically for the formulation of high-quality car polishes. Emulsion TNE 50 is recommended for the formulation of overpaintable car polishes and hard waxes.

Our **emulsions are easy to dilute with water**, preferably fully deionized water. Diluted emulsions should, however, be used as quickly as possible. We also recommend that emulsions be homogenized before use.

The data presented in this paper are in accordance with the present state of our knowledge, but do not absolve the user from carefully checking all supplies immediately upon receipt. We reserve the right to alter product constants within the scope of technical progress or new developments. The information given in this brochure should be checked by preliminary trials because of conditions during processing over which we have no control, especially where other companies' raw materials are also being used. The information provided by us does not absolve the user from the obligation of investigating the possibility of infringement of third parties' rights and, if necessary, clarifying the position. Recommendations for use do not constitute a warranty, either express or implied, of the fitness or suitability of the product for a particular purpose.