MOMENTIVE®

Technical Data Sheet

# SAG™ TP-325 Foam Control Agent

### Product Description

SAG TP-325 foam control agent is based on a unique organosilicone structure, making it a new generation of foam control agents for diesel fuel. SAG TP-325 foam control agent contains only 9.4% silicon.

### Key Features and Typical Benefits

- Enables longer storage stability for diesel fuels
- Permits fast and virtually complete filling of fuel tanks
- Helps maintain high performance in wet diesel fuel
- Minimizes silica deposits on fuel injection
- Provides excellent durability in wet and dry diesel fuels
- Requires low silicon level (one-half that of current state-of-the-art antifoam)
- Requires low usage levels – 5 ppm
- Quick foam knockdown
- Insoluble in water
- Does not contain halogen as an intentional ingredient

### Typical Physical Properties

| | |
|---|---|
| Appearance | Clear to slightly yellow |
| Form | Liquid |
| Apparent Specific Gravity at 20 °C | 1.03 |
| Viscosity at 25 °C, cSt | 400 |
| Refractive Index at 25 °C | 1.4450 |
| Flash Point, Pensky-Martens Closed Cup, °C (°F) | 130 (218) |
| Freezing Point, °C (°F) | < -32 (< -26) |

Typical properties are average data and are not to be used as or to develop specifications.

### Potential Applications

SAG TP-325 foam control agent is an excellent candidate for use in diesel additive packages (DAPs) and helps achieve cost-effective foam control of diesel fuels.

### General Considerations for Use

In every case tested, SAG TP-325 foam control agent exhibited superior performance – at half the concentration – to the competitive state-of-the-art antifoam, especially in wet diesel fuel.

The performance of SAG TP-325 foam control agent and a competitive state-of-the-art antifoam was evaluated in various diesel fuels. The antifoams were incorporated in different DAPs at varying levels. These DAPs were added at 200 ppm to particularly high and low-foaming commercial diesel fuels and allowed to stand overnight in order to simulate typical use conditions. The studies were conducted according to the DHYCCA (Direction Française d'Hydrocarbures) test, which consists of injecting the diesel fuel at 1.5 bar into a graduated cylinder and measuring the collapse time.

The antifoams were evaluated in both "dry" diesel (50 ppm water) and "wet" diesel (1000 ppm water). The final concentration of SAG TP-325 foam control agent was 7.5 ppm for high-foaming and 5 ppm for low-foaming diesel fuel. The competitive antifoam concentration, based on supplier-recommended addition rates, was 15 ppm and 10 ppm, respectively. Results of the eight-week test are summarized in Table 1 (high-foaming) and Table 2 (low-foaming).

Relative defoam times are shown in Figures 1 and 2 for high-foaming diesel fuel and in Figures 3 and 4 for low-foaming diesel.

Table 1: Antifoam Performance in High-Foaming Diesel Fuel

| Test Sample | Antifoam Level, ppm | Defoam Time, sec | | Defoam Time (at 8 wks) Relative to Control, % |
|---|---|---|---|---|
| | | Initial | After 8 wks | |
| Dry Diesel Fuel[1] | | | | |
| Control (Neat Diesel) | - | 62 | 78 | - |
| With SAG TP-325 Foam Control Agent | 7.5 | 8 | 9 | 11 |
| With State-of-the-Art AF | 15 | 10 | 11 | 14 |
| Wet Diesel Fuel[2] | | | | |
| Control (Neat Diesel) | - | 56 | 78 | - |
| With SAG TP-325 Foam Control Agent | 7.5 | 5 | 9 | 11 |
| With State-of-the-Art AF | 15 | 19 | 31 | 40 |

(1) 50 ppm water
(2) 1000 ppm water

Table 2: Antifoam Performance in Low-Foaming Diesel Fuel

| Test Sample | Antifoam Level, ppm | Defoam Time, sec | | Defoam Time (at 8 wks) Relative to Control, % |
|---|---|---|---|---|
| | | Initial | After 8 wks | |
| Dry Diesel Fuel[1] | | | | |
| Control (Neat Diesel) | - | 27 | 37 | - |
| With SAG TP-325 Foam Control Agent | 5 | 8 | 9 | 11 |
| With State-of-the-Art AF | 10 | 10 | 11 | 14 |
| Wet Diesel Fuel[2] | | | | |
| Control (Neat Diesel) | - | 27 | 33 | - |
| With SAG TP-325 Foam Control Agent | 5 | 3 | 4 | 12 |
| With State-of-the-Art AF | 10 | 7 | 12 | 32 |

(1) 50 ppm water
(2) 1000 ppm water

Figure 1: Relative Defoam Time of Antifoams as Measured in Dry High-Foaming Neat Diesel Fuel

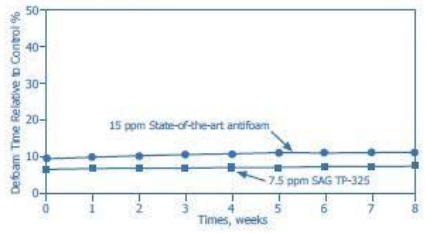



Figure 3: Relative Defoam Time of Antifoams as Measured in Dry Low-Foaming Neat Diesel Fuel

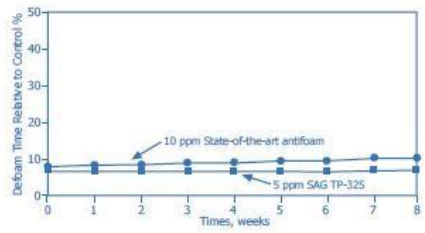



Figure 2: Relative Defoam Time of Antifoams as Measured in Wet High-Foaming Neat Diesel Fuel

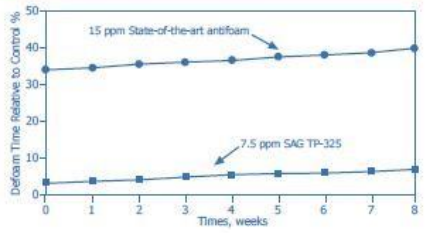
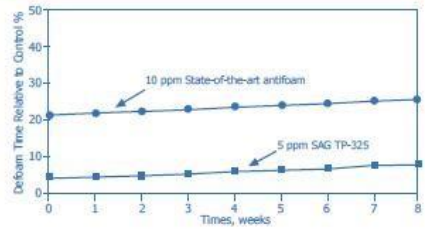



Figure 4: Relative Defoam Time of Antifoams as Measured in Wet Low-Foaming Neat Diesel Fuel



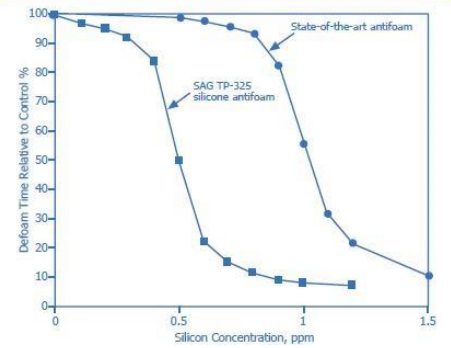
**Critical Antifoam Concentration**

Antifoam performance may be lost below a certain critical concentration; it will depend on the diesel fuel and the DAP.

Figure 5 shows the effect of low silicon concentrations for SAG TP-325 foam control agent measured in a typical diesel fuel. The critical concentration corresponds to the sharp change in the curve and occurs at around 0.4-0.5 ppm silicon for SAG TP-325 foam control agent compared to 0.9-1.0 ppm for the typical diesel fuel antifoam.

The results are expressed as a percentage of the defoam time for the control (neat diesel fuel).

Figure 5: Relative Defoam Times of Antifoams vs. Silicon Concentration in a Typical Diesel Fuel




**Patent Status**

Nothing contained herein shall be construed to imply the nonexistence of any relevant patents or to constitute the permission, inducement, or recommendation to practice any invention covered by any patent, without authority from the owner of the patent.

**Product Safety, Handling and Storage**

Customers should review the latest Safety Data Sheet (SDS) and label for product safety information, safe handling instructions, personal protective equipment, if necessary, emergency service contact information, and any special storage conditions requiredfor safety. Momentive Performance Materials (MPM) maintains an around-the-clock emergency service for its products. SDS are available at www.momentive.com or, upon request, from any MPM representative. For product storage and handling procedures to maintain the product quality within our stated specifications, please review Certificates of Analysis, which are available in the Order Center. Use of other materials in conjunction with MPM products (for example, primers) may require additional precautions. Please review and follow the safety information provided by the manufacturer of such other materials.

**Limitations**

Customers must evaluate Momentive Performance Materials products and make their own determination as to fitness of use intheir particular applications.

# Customer Service Centers

For additional information, please contact our Customer Service Team

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