



Technical Data Sheet

SILASTIC™ SST-8860 Self Sealing Silicone

Black, 2-part 5:1 mixing ratio, non-sagging, self-sealing, room temperature cure silicone sealant.

Features & Benefits

- Ambient temperature curing
- Paste like consistency, non-flowable
- Pot life of several hours before gel
- No pre-cleaning of mold-release agent from tire surface is required
- Stable visco-elastic properties from low to high temperatures

Composition

- Silicone polymer based (PDMS)
- Very low VOC emissions (< 0.1%)

Processing

- Standard 2-part dosing, mixing and dispensing equipment
- Static or dynamic mixing
- Non-abrasive
- Rapid ambient temperature dispensing (ca. < 2 minutes)
- Curing can be accelerated by heat (up to 80°C)

Typical Properties

Specification Writers: These values are not intended for use in preparing specifications.

Test ¹	Property	Unit	Result
	One or two-part		Two
	Mixing ratio	Wt.	5 to 1
CTM 0050	Viscosity part A	Pa.s	4000 (10 ⁻¹ s ⁻¹) 21 (100 s ⁻¹)
CTM 0050	Viscosity part B	Pa.s	23 (10 ⁻¹ s ⁻¹) 23 (100 s ⁻¹)
CTM 0050	Viscosity mixed	Pa.s	4000 (10 ⁻¹ s ⁻¹) 21 (100 s ⁻¹)
	Specific gravity Part A	g.ml ⁻¹	1.04
	Specific gravity Part B	g.ml ⁻¹	0.98
	Color Part A		Black
	Color Part B		Transparent

1. CTM: Corporate Test Method (copies of CTM's are available on request)

Typical Properties (Cont.)

Test	Property	Unit	Result
CTM 0055	Pot-life ²	Min	120
	Gel time ²	Hours	12
	Cure time ²	Days	7
	As cured after 28 days at 25°C, 50% rel. hum. with a 5 to 1 mix ratio		
ASTM D2240	Hardness	Shore 000	~30
ASTM C1135	Tensile strength	Pa	3.20 10 ⁴
ASTM C1135	Elongation at break		850
ASTM C1135	Young Modulus	Pa	3.3 10 ³
	Texture Analyzer, 12 mm thickness sample; TA-23 polyester probe, 1/2" diameter with 1/4" radius end; environmental conditions (23 ± 2°C, 50 ± 5% R.H)		
	F+ (cohesive force)		
	@ 1 day	g	~40
	@ 7 days	g	~120
	@ 28 days	g	~155

2. Can vary as function of environmental conditions (temperature, % relative humidity)
3. ASTM: American Society for Testing and Materials.

Description

SILASTIC™ SST-8860 Self-Sealing silicone forms a self-sealing layer on the inner surface of tires. The uncured rheology has been designed to facilitate application at 360°, while the cured rheology was optimized to perform equally well when a nail or a screw is puncturing the tire, and/or when it is leaving the tire. During puncture, the material rheology and adhesion properties are designed to follow the path of the nail or screw. When the nail or screw is removed, the material has enough cohesion to hold pressure in the cavity remaining, while maintaining elasticity to move and seal the hole. The optimal balance of viscoelastic properties, cohesion, and tackiness were combined to prevent leakage of pressurized air from tires.

Dosing & Mixing

- Mixing ratio should be controlled to be around 5 to 1 in weight. Considering the density of part A and part B the ideal volume ratio is 4.7 to 1 in volume respectively.
- The maximum off ratio to be controlled by the machine must remain between 4.5:1 and 5.5:1 by weight. Mixing equipment should be set up to dose pastes (piston, gear, or constant flow pumps) through a static or dynamic mixer. The material does not cause abrasion and a 24 element static mixer is recommended, with a minimum diameter of 15 mm.

Dispensing

- The product is shear thinning and easy to dispense and apply. Once applied, the product is non-sagging. The material can be left to cure in the position it was applied.
- Dispensing must be regulated by a constant flow rate and is adjustable depending on the application. Suggested flow rate is from 5cc/s to 50cc/s.
- A volume dispensing cycle of the mixed [A+B] material will typically be in the range of 1000 to 2000cc for passenger car vehicles, and 250 to 800cc for 2-wheelers - depending on the size of the tire to be coated.
- A shut-of-valve to interrupt the dispensing close to the nozzle is recommended

Curing

- Cure operates at ambient atmospheric temperature and humidity (preferably below 80% rel. humidity).
- Gel time is about 12 hours.
- Plateau properties are reached after ~7 days; further hardening during natural post-curing upon exposure to ambient temperature and relative humidity conditions of the storage area of the coated tire up to 28 days.

Processing

- Part A is non-reactive, black and paste like consistency, non-flowable.
- Part B is non-reactive, transparent and low viscosity material, flowable.
- In case of interruption of the dosing and mixing equipment between 1 hour and a few days, part A can be used to flush the static or dynamic mixer to prevent the material gelling in the mixer, in the line or in the valves.
- The mixture [A+B] will slowly start curing under ambient atmospheric conditions. Pot-life is about 120 minutes. After 120 minutes in the mixer there are lumps that may be observed in the product. Flushing the machine with fresh [A+B] mixture will easily and rapidly remove them.

Usable Life and Storage

Shelf-life of non-opened containers of Part A and Part B is about 12 months. Storage of Part A should be in a range of 0 to 32°C. Storage of Part B does not have restrictions on ambient temperature control but is also suggested to be in the range 0 to 32°C.

Packaging Information

- Part A: 200L drums
- Part B: 200L drums

Handling Precautions

PRODUCT SAFETY INFORMATION REQUIRED FOR SAFE USE IS NOT INCLUDED IN THIS DOCUMENT. BEFORE HANDLING, READ PRODUCT AND SAFETY DATA SHEETS AND CONTAINER LABELS FOR SAFE USE, PHYSICAL AND HEALTH HAZARD INFORMATION. THE SAFETY DATA SHEET IS AVAILABLE ON THE DOW WEBSITE AT DOW.COM, OR FROM YOUR DOW SALES APPLICATION ENGINEER, OR DISTRIBUTOR, OR BY CALLING DOW CUSTOMER SERVICE.

Limitations

This product is neither tested nor represented as suitable for medical or pharmaceutical uses.

Health and Environmental Information

To support customers in their product safety needs, Dow has an extensive Product Stewardship organization and a team of product safety and regulatory compliance specialists available in each area.

For further information, please see our website, dow.com, or consult your local Dow representative.

Disposal Considerations

Dispose in accordance with all local, state (provincial) and federal regulations. Empty containers may contain hazardous residues. This material and its container must be disposed in a safe and legal manner.

It is the user's responsibility to verify that treatment and disposal procedures comply with local, state (provincial) and federal regulations. Contact your Dow Technical Representative for more information.

Product Stewardship

Dow has a fundamental concern for all who make, distribute, and use its products, and for the environment in which we live. This concern is the basis for our product stewardship philosophy by which we assess the safety, health, and environmental information on our products and then take appropriate steps to protect employee and public health and our environment. The success of our product stewardship program rests with each and every individual involved with Dow products — from the initial concept and research, to manufacture, use, sale, disposal, and recycle of each product.

Customer Notice

Dow strongly encourages its customers to review both their manufacturing processes and their applications of Dow products from the standpoint of human health and environmental quality to ensure that Dow products are not used in ways for which they are not intended or tested. Dow personnel are available to answer your questions and to provide reasonable technical support. Dow product literature, including safety data sheets, should be consulted prior to use of Dow products. Current safety data sheets are available from Dow.

dow.com

NOTICE: No freedom from infringement of any patent owned by Dow or others is to be inferred. Because use conditions and applicable laws may differ from one location to another and may change with time, Customer is responsible for determining whether products and the information in this document are appropriate for Customer's use and for ensuring that Customer's workplace and disposal practices are in compliance with applicable laws and other government enactments. The product shown in this literature may not be available for sale and/or available in all geographies where Dow is represented. The claims made may not have been approved for use in all countries. Dow assumes no obligation or liability for the information in this document. References to "Dow" or the "Company" mean the Dow legal entity selling the products to Customer unless otherwise expressly noted. NO WARRANTIES ARE GIVEN; ALL IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE ARE EXPRESSLY EXCLUDED.

