Technical Data Sheet

XIAMETER™ SE 1186 U Silicone Rubber

60 Durometer, extrusion, high clarity, uncatalyzed silicone rubber

Features & Benefits

- 60 JIS-Type A hardness
- Good extrusion processability
- High clarity
- Good insulation
- Serviceable over wide temparature range
- Pigmentable
- Formulated to meet FDA 21 CFR 177.2600
- Suitable for both addition reaction and peroxide cure system

Composition

- Silicone rubber (HCR)
- Uncatalyzed stock (U-stock)

Applications

- Extrusion
- Tubes
- Hoses
- Cables
- Food contacts

Typical Properties

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

Test[1]	Property	Unit	Result
	As supplied		
	Appearance		Milky white translucent
JIS K 6249	Plasticity	mm/100	300
	As cured		
JIS K 6249	Density	g/cm^3	1.19
JIS K 6249	Durometer hardness, JIS type A		63

1. JIS: Japanese Industrial Standard.

   Properties obtained using 1.3 part of SILASTIC™ RC-14 A Rubber Additive (p-methylbenzoyl peroxide, 50% masterbatch) per 100 parts of XIAMETER™ SE 1185 U Silicone Rubber: molded 10 minutes at 120°C (248°F) and post-cured 1 hour at 250°C (482°F).

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Typical Properties (Cont.)

Test	Property	Unit	Result
JIS K 6249	Tensile strength, JIS#3	MPa	10.2
JIS K 6249	Elongation, JIS#3	%	570
JIS K 6249	Modulus at 100% elongation, JIS#3	MPa	1.47
JIS K 6249	Tear strength, crescent	N/mm	18
JIS K 6249	Tear strength, angle	N/mm	24
JIS K 6249	Linear shrinkage, disc[2]	%	2.4
JIS K 6255	Rebound, Lupke	%	36
JIS K 6249	Compression set, 180°C /22h	%	88
JIS K 6249	Dielectric strength	kV/mm	27
JIS K 6249	Volume resistance	TΩ·m	19

2. Linear shrinkage depends on the curing conditions such as type of curing agent, curing temperature and size of molded product.

How to Use

Milling

For adding vulcanizing agents, additives, and / or pigments or blending, milling with a two-roll mill is the most suitable process. Milling time should be carefully decided to secure uniformity of materials.

Vulcanization

XIAMETER™ SE 1186 U Silicone Rubber requires the addition of a vulcanizing agent. SILASTIC™ RC-14 A Rubber Additive is recommended for hot air vulcanization.

The addition reaction curing agents and other SILASTIC™ curing agents are also available for vulcanization.

Compounding

XIAMETER™ SE 1186 U Silicone Rubber can be blended with other bases to modify the durometer of the compound. The physical properties of this product can be modified using a range of SILASTIC™ or XIAMETER™ additives. Further, XIAMETER™ SE 1186 U Silicone Rubber can be pigmented to almost any color shade desired.

Food Contact

This product has been formulated to meet applicable food contact regulations and recommendations like FDA 21.CFR 177.2600.

Note: It remains the manufacturers' responsibility to test the final product.

For further details on the suitability of this product for food contact applications, please refer to the Food Regulatory Profile.

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.

Usable Life and Storage

For further details on the suitability of this product for food contact applications, please refer to the Food Regulatory Profile.

Packaging Information

XIAMETER™ SE 1186 U Silicone Rubber is available in 20 kg (44 lb) boxes.

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.

Table 1: Heat and Fluid Resistance of XIAMETER™ SE 1186 U Silicone Rubber

Test	Unit	Result
Heat Aged, 72 Hours at 200°C (392°F)		
Hardness Change	points	+5
Tensile Change	%	-1
Elongation Change	%	-28
Heat Aged, 72 Hours at 250°C (482°F)		
Hardness Change	points	+22
Tensile Change	%	-24
Elongation Change	%	-92
IRM 901 Oil, 72 Hours at 150°C (302°F)		
Hardness Change	points	-5
Tensile Change	%	-29
Elongation Change	%	-28
Volume Change	%	+7
IRM 903 Oil, 72 Hours at 150°C (302°F)		
Hardness Change	points	-31
Tensile Change	%	-44
Elongation Change	%	-37
Volume Change	%	+54

Properties obtained using 1.3 part of SILASTIC™ RC-14 A Rubber Additive (p-methylbenzoyl peroxide, 50% masterbatch) per 100 parts of XIAMETER™ SE 1186 U Silicone Rubber: molded 10 minutes at 120°C (248°F) and post-cured 1 hour at 250°C (482°F).

Table 2: Properties of XIAMETER™ SE 1186 U Silicone Rubber with Addition Reaction

		Addition reaction
Formulations		
XIAMETER™ SE 1186 U Silicone Rubber	parts	100
SILASTIC™ RD-9 Rubber Additive[1]	parts	0.5
SILASTIC™ RD-27 Rubber Additive[2]	parts	0.6
SILASTIC™ RD-7 Rubber Additive[3]	parts	0.6
Cure properties		
Test condition	minutes at °C	10/120
T-10	minutes	3.0
T-90	minutes	3.9

1. SILASTIC™ RD-9 Rubber Additive: inhibitor for addition reaction
2. SILASTIC™ RD-27 Rubber Additive: Pt catalyst for addition reaction
3. SILASTIC™ RD-7 Rubber Additive: crosslinker for addition reaction

Table 2: Properties of XIAMETER™ SE 1186 U Silicone Rubber with Addition Reaction (Cont.)

		Addition reaction
Curing conditions		
Press cure	minutes at °C	10/120
Post cure	hours at °C	4/200
Properties after press cure		
Durometer hardness, JIS type A		50
Properties after post cure		
Density	g/cm^3	1.18
Durometer hardness, JIS type A		61
Tensile strength, JIS#3	MPa	6.8
Elongation, JIS#3	%	496
Modulus at 100% elongation, JIS#3	MPa	1.41
Tear strength, crescent	N/mm	28
Transmission (t=1 mm, 450 nm)	%	75
Transmission (t=1 mm, 580 nm)	%	83