according to GB/T 16483 and GB/T 17519

#### **DOW CORNING TORAY SE 4486**



 Version
 Revision Date:
 SDS Number:
 Date of last issue: 2015/10/13

 1.5
 2016/03/01
 981941-00006
 Date of first issue: 2015/01/08

#### 1. PRODUCT AND COMPANY IDENTIFICATION

Product name : DOW CORNING TORAY SE 4486

Product code : 0000000002490595, 00000000002490595

Chemical nature : Silicone

Sealant

#### Manufacturer or supplier's details

Company : Dow Corning (Zhangjiagang) Holding Company Limited

Address : 18 Beihai Road, Yangtze River International Chemical In-

dustry Park, Zhangjiagang, Jiangsu Province, P.R.C., Post-

al Code: 215634

Telephone : 400 880 7110

Emergency telephone number : (86 512) 56732049

E-mail address : China.info@dowcorning.com

#### Recommended use of the chemical and restrictions on use

Recommended use : Adhesive, binding agents

#### 2. HAZARDS IDENTIFICATION

#### **Emergency Overview**

Appearance : viscous liquid
Colour : white
Odour : slight

Combustible liquid.

**GHS Classification** 

Flammable liquids : Category 4

**GHS** label elements

Hazard pictograms : None

Signal word : Warning

Hazard statements : H227 Combustible liquid.

Precautionary statements : Prevention:

P210 Keep away from heat/sparks/open flames/hot surfaces.

No smoking.

P271 Use only outdoors or in a well-ventilated area.

P280 Wear protective gloves/ protective clothing/ eye protec-

according to GB/T 16483 and GB/T 17519

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tion/ face protection.

Storage:

P403 + P235 Store in a well-ventilated place. Keep cool.

Disposal:

P501 Dispose of contents/ container to an approved waste

disposal plant.

#### Physical and chemical hazards

Combustible liquid.

#### **Health hazards**

Not classified based on available information.

#### **Environmental hazards**

Not classified based on available information.

#### Other hazards which do not result in classification

Vapours may form explosive mixture with air.

#### 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Mixture

#### **Hazardous components**

Chemical name	CAS-No.	Concentration (% w/w)
Methyltrimethoxysilane treated aluminum oxide	Not Assigned	>= 70 - < 90
Methyltrimethoxysilane	1185-55-3	>= 0.1 - < 1

#### 4. FIRST AID MEASURES

If inhaled If inhaled, remove to fresh air.

Get medical attention if symptoms occur.

In case of skin contact Wash with water and soap as a precaution.

Get medical attention if symptoms occur.

In case of eye contact Flush eyes with water as a precaution.

Get medical attention if irritation develops and persists.

If swallowed If swallowed, DO NOT induce vomiting.

Get medical attention if symptoms occur. Rinse mouth thoroughly with water.

Most important symptoms and effects, both acute and

delayed

None known.

Protection of first-aiders No special precautions are necessary for first aid responders.

Notes to physician Treat symptomatically and supportively.

according to GB/T 16483 and GB/T 17519

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#### 5. FIREFIGHTING MEASURES

Suitable extinguishing media

Water spray

Alcohol-resistant foam Carbon dioxide (CO2)

Dry chemical

Unsuitable extinguishing

media

High volume water jet

Specific hazards during fire-

fighting

Do not use a solid water stream as it may scatter and spread

Flash back possible over considerable distance. Vapours may form explosive mixtures with air.

Exposure to combustion products may be a hazard to health.

Hazardous combustion prod- :

ucts

Carbon oxides Silicon oxides

Metal oxides Formaldehyde

Specific extinguishing meth-

ods

Use extinguishing measures that are appropriate to local cir-

cumstances and the surrounding environment. Use water spray to cool unopened containers.

Remove undamaged containers from fire area if it is safe to do

Evacuate area.

Special protective equipment:

for firefighters

Wear self-contained breathing apparatus for firefighting if nec-

Use personal protective equipment.

#### 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protec- : tive equipment and emer-

gency procedures

Remove all sources of ignition.

Follow safe handling advice and personal protective equip-

ment recommendations.

Environmental precautions

Discharge into the environment must be avoided. Prevent further leakage or spillage if safe to do so.

Prevent spreading over a wide area (e.g. by containment or oil

barriers).

Retain and dispose of contaminated wash water.

Local authorities should be advised if significant spillages

cannot be contained.

Methods and materials for containment and cleaning up Non-sparking tools should be used.

Soak up with inert absorbent material.

Suppress (knock down) gases/vapours/mists with a water

spray jet.

For large spills, provide dyking or other appropriate containment to keep material from spreading. If dyked material can be pumped, store recovered material in appropriate container. Clean up remaining materials from spill with suitable absor-

according to GB/T 16483 and GB/T 17519

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bent.

Local or national regulations may apply to releases and disposal of this material, as well as those materials and items employed in the cleanup of releases. You will need to deter-

mine which regulations are applicable.

Sections 13 and 15 of this SDS provide information regarding

certain local or national requirements.

#### 7. HANDLING AND STORAGE

Handling

Technical measures : See Engineering measures under EXPOSURE

CONTROLS/PERSONAL PROTECTION section.

Local/Total ventilation : Use with local exhaust ventilation.

Advice on safe handling : Avoid prolonged or repeated contact with skin.

Handle in accordance with good industrial hygiene and safety

practice.

Keep container tightly closed.

Keep away from heat and sources of ignition.

Take precautionary measures against static discharges.
Take care to prevent spills, waste and minimize release to the

environment.

Avoidance of contact : Oxidizing agents

Storage

Conditions for safe storage : Keep in properly labelled containers.

Keep tightly closed.

Keep in a cool, well-ventilated place.

Store in accordance with the particular national regulations.

Keep away from heat and sources of ignition.

Materials to avoid : Do not store with the following product types:

Strong oxidizing agents

Packaging material : Unsuitable material: None known.

#### 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

#### Components with workplace control parameters

	<del>-</del>			
Components	CAS-No.	Value type	Control parame-	Basis
		(Form of	ters / Permissible	
		exposure)	concentration	
Methyltrimethoxysilane treated	Not Assigned	PC-TWA	4 mg/m3	GBZ 2.1-
aluminum oxide		(Total dust)		2007
		TWA (Res-	1 mg/m3	ACGIH
		pirable frac-	(Aluminium)	
		tion)		
Methyltrimethoxysilane	1185-55-3	TWA	7.5 ppm	DCC OEL

according to GB/T 16483 and GB/T 17519

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**Engineering measures** 

Processing may form hazardous compounds (see section

10).

Ensure adequate ventilation, especially in confined areas.

Minimize workplace exposure concentrations.

Personal protective equipment

Respiratory protection : Use respiratory protection unless adequate local exhaust

ventilation is provided or exposure assessment demonstrates that exposures are within recommended exposure quidelines.

Filter type : Particulates type

Eye/face protection : Wear the following personal protective equipment:

Safety glasses

Skin and body protection : Select appropriate protective clothing based on chemical

resistance data and an assessment of the local exposure

potential.

Wear the following personal protective equipment: Flame retardant antistatic protective clothing.

Skin contact must be avoided by using impervious protective

clothing (gloves, aprons, boots, etc).

Hand protection

Remarks : Choose gloves to protect hands against chemicals depending

on the concentration and quantity of the hazardous substance and specific to place of work. Take note that the product is flammable, which may impact the selection of hand protection. Wash hands before breaks and at the end of

workday.

Hygiene measures : Ensure that eye flushing systems and safety showers are

located close to the working place. When using do not eat, drink or smoke. Wash contaminated clothing before re-use.

These precautions are for room temperature handling. Use at elevated temperature or aerosol/spray applications may

require added precautions.

For further information regarding the use of silicones / organic oils in consumer aerosol applications, please refer to the guidance document regarding the use of these type of materials in consumer aerosol applications that has been developed by the silicone industry (www.SEHSC.com) or contact

the Dow Corning customer service group.

#### 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance : viscous liquid

Colour : white

Odour : slight

according to GB/T 16483 and GB/T 17519

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Odour Threshold : No data available

pH : No data available

Melting point/freezing point : No data available

Initial boiling point and boiling

range

: > 100 °C

Flash point : 74 °C

Method: Seta closed cup

Evaporation rate : No data available

Flammability (solid, gas) : Not applicable

Upper explosion limit : No data available

Lower explosion limit : No data available

Vapour pressure : No data available

Relative vapour density : No data available

Relative density : 2.57

Solubility(ies)

Water solubility : No data available

Partition coefficient: n-

octanol/water

No data available

Auto-ignition temperature : No data available

Decomposition temperature : No data available

Viscosity

Viscosity, dynamic : 250 Poise

Explosive properties : Not explosive

Oxidizing properties : The substance or mixture is not classified as oxidizing.

Molecular weight : No data available

#### 10. STABILITY AND REACTIVITY

Reactivity : Not classified as a reactivity hazard.

Chemical stability : Stable under normal conditions.

Possibility of hazardous reac-

tions

Combustible liquid.

Vapours may form explosive mixture with air.

Use at elevated temperatures may form highly hazardous

according to GB/T 16483 and GB/T 17519

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compounds.

Can react with strong oxidizing agents.

Methyl alcohol is formed upon contact with water or humid air. When heated to temperatures above 150 °C (300 °F) in the presence of air, product can form formaldehyde vapours. Safe handling conditions may be maintained by keeping vapour concentrations within the occupational exposure limit for

formaldehyde.

Hazardous decomposition products will be formed at elevated

temperatures.

Conditions to avoid : Heat, flames and sparks.

Incompatible materials : Oxidizing agents

Hazardous decomposition products

Thermal decomposition : Formaldehyde

#### 11. TOXICOLOGICAL INFORMATION

Exposure routes : Inhalation

Skin contact Ingestion Eye contact

#### **Acute toxicity**

Not classified based on available information.

#### **Components:**

Methyltrimethoxysilane:

Acute oral toxicity : LD50 (Rat): 12.3 ml/kg

Assessment: The substance or mixture has no acute oral tox-

icity

Remarks: Information taken from reference works and the

literature.

Acute inhalation toxicity : LC50 (Rat): > 42.1 mg/l

Exposure time: 6 h
Test atmosphere: vapour

Assessment: The substance or mixture has no acute inhala-

tion toxicity

Remarks: Based on test data

Acute dermal toxicity : LD50 (Rabbit): > 9,500 mg/kg

Assessment: The substance or mixture has no acute dermal

toxicity

Remarks: Based on test data

#### Skin corrosion/irritation

Not classified based on available information.

according to GB/T 16483 and GB/T 17519

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#### **Components:**

#### Methyltrimethoxysilane:

Species: Rabbit

Result: No skin irritation Remarks: Based on test data

#### Serious eye damage/eye irritation

Not classified based on available information.

#### **Components:**

#### Methyltrimethoxysilane:

Species: Rabbit

Result: No eye irritation Remarks: Based on test data

#### Respiratory or skin sensitisation

#### Skin sensitisation

Not classified based on available information.

#### Respiratory sensitisation

Not classified based on available information.

#### Components:

#### Methyltrimethoxysilane:

Assessment: Probability or evidence of low to moderate skin sensitisation rate in humans

Test Type: Buehler Test Species: Guinea pig

Remarks: Based on test data

#### Germ cell mutagenicity

Not classified based on available information.

#### Components:

#### Methyltrimethoxysilane:

Genotoxicity in vitro : Test Type: Bacterial reverse mutation assay (AMES)

Result: negative

Remarks: Based on test data

: Test Type: Mutagenicity (in vitro mammalian cytogenetic test)

Result: positive

Remarks: Based on test data

Test Type: Chromosome aberration test in vitro

Result: positive

Remarks: Based on test data

Genotoxicity in vivo : Test Type: Mammalian erythrocyte micronucleus test (in vivo

cytogenetic assay)

Species: Mouse

according to GB/T 16483 and GB/T 17519

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Application Route: Ingestion

Result: negative

Remarks: Based on test data

Germ cell mutagenicity -

Assessment

: Animal testing did not show any mutagenic effects.

#### Carcinogenicity

Not classified based on available information.

#### Reproductive toxicity

Not classified based on available information.

#### **Components:**

#### Methyltrimethoxysilane:

Effects on fertility : Test Type: Combined repeated dose toxicity study with the

reproduction/developmental toxicity screening test

Species: Rat, male and female Application Route: Ingestion Symptoms: No effects on fertility Remarks: Based on test data

Effects on foetal develop-

ment

Test Type: Combined repeated dose toxicity study with the

reproduction/developmental toxicity screening test

Species: Rat, male and female Application Route: Ingestion

Symptoms: No effects on foetal development

Remarks: Based on test data

Reproductive toxicity - As-

sessment

No evidence of adverse effects on sexual function and fertility,

or on development, based on animal experiments.

#### STOT - single exposure

Not classified based on available information.

#### STOT - repeated exposure

Not classified based on available information.

#### Components:

#### Methyltrimethoxysilane:

Exposure routes: inhalation (vapour)

Assessment: No significant health effects observed in animals at concentrations of 1 mg/l/6h/d or

ess.

Exposure routes: Ingestion

Assessment: No significant health effects observed in animals at concentrations of 100 mg/kg

bw or less.

according to GB/T 16483 and GB/T 17519

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#### Repeated dose toxicity

#### **Components:**

#### Methyltrimethoxysilane:

Species: Rat

Application Route: inhalation (vapour) Remarks: Based on test data

Species: Rat

Application Route: Ingestion Remarks: Based on test data

#### **Aspiration toxicity**

Not classified based on available information.

#### **Product:**

No aspiration toxicity classification

#### 12. ECOLOGICAL INFORMATION

#### **Ecotoxicity**

#### **Components:**

#### Methyltrimethoxysilane:

Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): > 100 mg/l

Exposure time: 96 h

Method: OECD Test Guideline 203

Toxicity to daphnia and other :

aquatic invertebrates

EC50 (Daphnia sp.): > 100 mg/l

Exposure time: 48 h

Method: OECD Test Guideline 202

Toxicity to algae : ErC50 (Pseudokirchneriella subcapitata (green algae)): > 3.6

mg/l

Exposure time: 72 h

Method: OECD Test Guideline 201 Remarks: No toxicity at the limit of solubility

EC10 (Pseudokirchneriella subcapitata (green algae)): > 3.6

ma/l

Exposure time: 72 h

Method: OECD Test Guideline 201 Remarks: No toxicity at the limit of solubility

Toxicity to bacteria : EC50: > 100 mg/l

Method: OECD Test Guideline 209

#### Persistence and degradability

#### **Components:**

#### Methyltrimethoxysilane:

according to GB/T 16483 and GB/T 17519

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Stability in water : Degradation half life: 2.2 h pH: 7

Bioaccumulative potential

**Components:** 

Methyltrimethoxysilane:

Partition coefficient: n-

octanol/water

: log Pow: -2.36

Mobility in soil

No data available

Other adverse effects

No data available

#### 13. DISPOSAL CONSIDERATIONS

**Disposal methods** 

Waste from residues : Dispose of in accordance with local regulations.

Contaminated packaging

Empty containers should be taken to an approved waste han-

dling site for recycling or disposal.

Empty containers retain residue and can be dangerous. Do not pressurize, cut, weld, braze, solder, drill, grind, or expose such containers to heat, flame, sparks, or other sources of ignition. They may explode and cause injury and/or death. If not otherwise specified: Dispose of as unused product.

#### 14. TRANSPORT INFORMATION

#### **International Regulation**

**UNRTDG** 

Not regulated as a dangerous good

IATA-DGR

Not regulated as a dangerous good

**IMDG-Code** 

Not regulated as a dangerous good

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable for product as supplied.

**National Regulations** 

GB 6944/12268

Not regulated as a dangerous good

according to GB/T 16483 and GB/T 17519

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#### 15. REGULATORY INFORMATION

#### **National regulatory information**

#### Law on the Prevention and Control of Occupational Diseases

The components of this product are reported in the following inventories:

NZIoC : All ingredients listed or exempt.

REACH : All ingredients (pre-)registered or exempt.

IECSC : All ingredients listed or exempt.

ENCS/ISHL : All components are listed on ENCS/ISHL or exempted from

inventory listing.

PICCS : All ingredients listed or exempt.

DSL : This product contains one or more substances which are not

on the Canadian Domestic Substances List (DSL). Import of this product into Canada has volume limitations. For volume limits please consult Dow Corning Regulatory Compliance.

TSCA : All chemical substances in this material are included on or

exempted from listing on the TSCA Inventory of Chemical

Substances.

AICS : One or more ingredients are not listed or exempt.

KECI : All ingredients listed, exempt or notified.

TCSI : All ingredients listed or exempt.

#### **16. OTHER INFORMATION**

#### **Further information**

Sources of key data used to compile the Safety Data

Sheet

Internal technical data, data from raw material SDSs, OECD eChem Portal search results and European Chemicals Agen-

cy, http://echa.europa.eu/

Items where changes have been made to the previous version are highlighted in the body of this document by two vertical lines.

Date format : yyyy/mm/dd

#### Full text of other abbreviations

ACGIH : USA. ACGIH Threshold Limit Values (TLV)

DCC OEL : Dow Corning Guide

GBZ 2.1-2007 : Occupational exposure limits for hazardous agents in the

workplace - Chemical hazardous agents.

ACGIH / TWA 8-hour, time-weighted average

according to GB/T 16483 and GB/T 17519

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DCC OEL / TWA : Time weighted average

GBZ 2.1-2007 / PC-TWA : Permissible concentration - time weighted average

AICS - Australian Inventory of Chemical Substances; ANTT - National Agency for Transport by Land of Brazil; ASTM - American Society for the Testing of Materials; bw - Body weight; CMR -Carcinogen, Mutagen or Reproductive Toxicant; CPR - Controlled Products Regulations; DIN -Standard of the German Institute for Standardisation; DSL - Domestic Substances List (Canada); ECx - Concentration associated with x% response; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; ERG - Emergency Response Guide; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; n.o.s. - Not Otherwise Specified; Nch - Chilean Norm; NO(A)EC -No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NOM - Official Mexican Norm; NTP - National Toxicology Program; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances: (Q)SAR - (Quantitative) Structure Activity Relationship; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; SADT - Self-Accelerating Decomposition Temperature; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TDG - Transportation of Dangerous Goods; TSCA - Toxic Substances Control Act (United States); UN - United Nations; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative; WHMIS -Workplace Hazardous Materials Information System

#### Disclaimer

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and shall not be considered a warranty or quality specification of any type. The information provided relates only to the specific material identified at the top of this SDS and may not be valid when the SDS material is used in combination with any other materials or in any process, unless specified in the text. Material users should review the information and recommendations in the specific context of their intended manner of handling, use, processing and storage, including an assessment of the appropriateness of the SDS material in the user's end product, if applicable.

CN / EN



# Thermal Interface - Wet Dispensed

# Dow Corning® SE4486 Thermally Conductive Adhesive

#### **COMPOSITION**

- 1-part
- Polydimethylsiloxane adhesive

#### TYPICAL PROPERTIES

Specification Writers: These values are not intended for use in preparing specifications. Please contact your local Dow Corning sales office or your Global Dow Corning Connection before writing specifications on this product.

Property	Unit	Value
Viscosity	cР	20000
	mPa-sec	20000
	Pa-sec	20
Tack-Free Time at 25°C	minutes	4
Specific Gravity (Cured)	-	2.59
Durometer Shore A (JIS)	-	80
Tensile Strength	psi	595
	MPa	4.1
	kg/cm2	42
Elongation	%	45
Unprimed Adhesion - Lap Shear	psi	350
(Glass)	MPa	2.4
	N/cm2	243
Dielectric Strength	volts/mil	500
	kV/mm	20
Dielectric Constant at 1 MHz	-	4.8
Volume Resistivity	ohm*cm	2E+14
Dissipation Factor at 1 MHz	-	3E-03
Thermal Conductivity	btu/hr ft degF	0.919
	W/mK	1.59
Content of Low Molecular Weight (D4-D10)	wt%	0.001

#### **DESCRIPTION**

One-part RTV-cure thermally conductive materials cure with moisture exposure to produce durable, relatively low-stress elastomer with a noncorrosive byproduct. Long-term, reliable protection of sensitive circuits and components is important in many of today's delicate and demanding electronic applications. With the increase in processing power and the trend toward smaller, more compact electronic modules, the need for thermal management is growing. Thermally conductive silicones function as heat transfer media, durable dielectric insulation, barriers against environmental contaminants and as stress-relieving shock and vibration absorbers over a wide temperature and humidity range. In addition to sustaining their physical and electrical properties over a broad range of operating conditions, silicones are resistant to ozone and ultraviolet degradation and have good chemical stability. Good heat transfer is dependent on a good interface between the heat producing device and the heat transfer media. Silicones have a low surface tension that enables them to wet most surfaces, which can lower the thermal contact resistance between the substrate and the material.

#### SUBSTRATE TESTING

To ensure maximum bond strength for adhesives on a particular substrate, 100 percent cohesive failure of the adhesive in a lap shear or similar adhesive strength test is needed. This ensures compatibility of the adhesive with the substrate being considered. Also, this test can be used to determine minimum cure time or to detect the presence of surface contaminants such as mold release agents, oils, greases and oxide films.

#### PROCESSING/CURING

The one-part moisture-cure adhesives are generally cured at room temperature and in a range of 0 to 80 percent relative humidity. Greater than 90 percent of their full physical

properties should be attained within 4 to 7 hours depending on the product chosen. These materials are not typically used for highly confined or deep section cures. Materials will generally cure about 0. 5 inch (6.35 mm) per 7 days.

#### ADHESION

Dow Corning silicone adhesives are specially formulated to provide unprimed adhesion to many reactive metals, ceramics and glass, as well as to selected laminates, resins and plastics. However, good adhesion cannot be expected on non-reactive metal substrates or non-reactive plastic surfaces such as Teflon®, polyethylene or polypropylene. Special surface treatments such as chemical etching or plasma treatment can sometimes provide a reactive surface and promote adhesion to these types of substrates. Dow Corning® brand primers can be used to increase the chemical activity on difficult substrates. For best results, the primer should be applied in a very thin, uniform coating and then wiped off after application. After application, primers should be thoroughly air dried prior to application of the silicone elastomer. Alternatively, use a low-viscosity primerless adhesive to pot your components. Poor adhesion can be experienced on plastic or rubber substrates that are highly plasticized, since the mobile plasticizers act as release agents. Small-scale laboratory evaluation of all substrates is recommended before production trials are made. In general, increasing the cure temperature and/or cure time will improve the ultimate adhesion.

## USEFUL TEMPERATURE RANGES

For most uses, silicone adhesives should be operational over a temperature range of -45 to 200°C (-49 to 392 °F) for long periods of time. However, at both the low and high temperature ends of the spectrum, behavior of the materials and performance in particular applications can become more complex and

require additional considerations. For low-temperature performance, thermal cycling to conditions such as -55°C (-67°F) may be possible for most products, but performance should be verified for your parts or assemblies. Factors that may influence performance are configuration and stress sensitivity of components, cooling rates and hold times, and prior temperature history. At the high-temperature end, the durability of the cured silicones is time and temperature dependent. As expected, the higher the temperature, the shorter the time the material will remain useable.

#### SOLVENT EXPOSURE

Although highly filled silicones such as those discussed in this data sheet are generally more resistant to solvent or fuel exposure, standard silicones are intended only to survive splash or intermittent exposures. Testing should be done to confirm performance of the adhesives in the application and under the specified environmental conditions.

### USABLE LIFE AND STORAGE

Shelf life is indicated by the "Use By" date found on the product label. For best results, Dow Corning thermally conductive materials should be stored at or below the maximum specified storage temperature. Special precautions must be taken to prevent moisture from contacting these materials. Containers should be kept tightly closed and head or air space minimized. Partially filled containers should be purged with dry air or other gases, such as nitrogen. Any special storage and handling instructions will be printed on the product containers.

HANDLING
PRECAUTIONS
PRODUCT SAFETY
INFORMATION REQUIRED
FOR SAFE USE IS NOT
INCLUDED IN THIS
DOCUMENT. BEFORE
HANDLING, READ PRODUCT

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