AEROSPACE STANDARD	AS81550	REV. A
	Issued 2004-06 Revised 2014-05 Superseding AS81550	

(R) Insulating Compound, Electrical, Embedding, Reversion Resistant Silicone

FSC 5970

RATIONALE

Specification is being updated to SAE format and standardized references. Standard measurement system changed to primary (metric secondary). Removed packaging specifics. Minor technical changes are being proposed (primarily temperature adjustments for consistency within the spec) along with update of referenced equipment. Added language regarding use of Date of Shipment vs. Date of Packaging for calculation of shelf life.

1. SCOPE

1.1 Scope

This specification covers the requirements for two types of a two-part, transparent, reversion resistant flexible insulating compound, to provide resilient, environmental, and electrical insulation of components in systems in temperature range -85 to 392 °F (-65 to 200 °C). These insulating compounds are intended for embedding, potting or encapsulation of electrical and electronic components in systems where tear resistance is not critical but their use is not limited to such applications. These transparent compounds allow visual circuit and part identification and facilitates part replacement and repairs. The insulating compound shall cure in sections of unlimited thickness, either exposed to air or completely sealed.

1.2 Classification

Insulating compounds covered by this specification shall be of the following types.

Type I - Room temperature curing.
Type II - Heat curing.

1.2.1 Type I compound is intended for general purpose potting and embedding of electronic equipment where it is not convenient to heat the equipment. Type I material has low dielectric losses that do not change appreciably over a temperature range of -67 to 310 °F (-55 to 154 °C). It is intended for use where protection from thermal cycling, mechanical shock, vibration and moisture is required.

1.2.2 Type II compound is intended for the same uses as Type I and shall have the same properties when cured. Type II is used when the electronic parts can be heated and provides faster processing during the embedding procedure.

1.2.2.1 Heat curing of Type II materials may be accomplished at lower temperatures and correspondingly longer times, such as 4 hours at 150 °F (66 °C) or as specified by the manufacturer.

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1.3 Safety – Hazardous Materials

Shall be in accordance with AS5502 (1.1).

2. APPLICABLE DOCUMENTS

Shall be in accordance with AS5502 (2.).

2.1 SAE Publications

Available from SAE International, 400 Commonwealth Drive, Warrendale, PA 15096-0001, Tel: 877-606-7323 (inside USA and Canada) or 724-776-4970 (outside USA), www.sae.org.

AMS4049 Aluminum Alloy, Sheet and Plate, Alclad, 5.6Zn - 2.5Mg - 1.6Cu - 0.23Cr (Alclad 7075; -T6 Sheet - T651 Plate) Solution and Precipitation Heat Treated

AS5127 Aerospace Standard Test Methods for Aerospace Sealants Methods for Preparing Aerospace Sealant Test Specimens

AS5127/1 Aerospace Standard Test Methods for Aerospace Sealants, Two-Component Synthetic Rubber Compounds

AS5502 Standard Requirements for Aerospace Sealants and Adhesion Promoters

2.2 ASTM Publications

Available from ASTM International, 100 Barr Harbor Drive, P.O. Box C700, West Conshohocken, PA 19428-2959, Tel: 610-832-9585, www.astm.org.

ASTM D149 Standard Test Method for Dielectric Breakdown Voltage and Dielectric Strength of Solid Electrical Insulating Materials at Commercial Power Frequencies

ASTM D150 Standard Test Methods for A-C Loss Characteristics and Permittivity (Dielectric Constant) of Solid Electrical Insulation

ASTM D257 Standard Test Methods for D-C Resistance or Conductance of Insulating Materials

ASTM D471 Standard Test Method for Rubber Property-Effect of Liquids

ASTM D635 Standard Test Method for Rate of Burning and/or Extent and Time of Burning of Plastics in a Horizontal Position

ASTM D792 Standard Test Methods for Density and Specific Gravity (Relative Density) of Plastics by Displacement

ASTM D2240 Standard Test Method for Rubber Property-Durometer Hardness

2.3 U.S Government Publications

Available from DLA Document Services, Building 4/D, 700 Robbins Avenue, Philadelphia, PA 19111-5094, Tel: 215-697-6396, http://quicksearch.dla.mil/.

A-A-59544 Cable and Wire, Electrical (Power, Fixed Installation)

MIL-STD-810 Environmental Engineering Considerations and Laboratory Tests

3. TECHNICAL REQUIREMENTS

3.1 First Article

A sample shall be subjected to first article inspection in accordance with 4.3 and when specified on Purchase Documents (see 8.6).

3.2 Material

The insulating compound shall be supplied as a two-component transparent, reversion resistant, flexible silicone rubber, consisting of the base compound and the curing agent. Components shall be of the highest quality and shall be homogeneous and free of pigments, and foreign matter. The material shall contain no solvents.

3.2.1 Primer

A primer specified by the manufacturer shall be used in all tests where required.

3.2.2 Suitability

The compound shall protect the electrical components of the equipment to which it is applied by sealing against such environmental conditions as moisture, dirt, fumes, fungus or other deleterious substances. It shall not cause deterioration or corrosion of materials used in the encapsulated parts.

3.2.3 Toxicological Formulations

Shall be in accordance with AS5502 (3.2).

3.3 Quality

Shall be in accordance with AS5502 (3.3)

3.4 Shelf Life

Shelf life shall be a minimum of 4 months from date of packaging. Date of Shipment may be used by a manufacturer to provide shelf life and/or warranty claims, however first article testing for Shelf Storage Life (3.5.22) must be performed on the maximum allowable packaged product life from last performed Quality Conformance Tests (4.4.2) proposed by the manufacturer.

3.5 Properties

The insulating compound and curing agent, when mixed in accordance with manufacturer's instructions and cured as in 4.5.4, shall conform to all requirements shown in Table 1, determined in accordance with specified test methods.

TABLE 1 - PROPERTIES

Paragraph	Property	Requirement	Test Procedures (Paragraph)
3.5.1	Color, mixed	Shall be transparent and shall range from colorless to light straw	
3.5.2	Viscosity of Base Compound, max	70 poises	AS5127/1 (5.3) Use No. 2 spindle @ 4 rpm
3.5.3	Specific Gravity (average), max	1.01 to 1.08	ASTM D792, Method A AS81550 (4.8.1)
3.5.4	Application Life, min After 5 minutes of mixing the viscosity shall not exceed 750 poise (75 Pa•S), Type I Type II	 2 hours 5 hours	AS5127/1 (5.6.1) Use No. 5 spindle @ 4 rpm
3.5.5	Standard Cure, min Type I Type II	 20 Durometer A 40 Durometer A	ASTM D2240 AS81550 (4.6.2)
3.5.6	Flammability	Shall not burn more than 1 inch and shall extinguish within 20 seconds after removal of flame	ASTM D635 AS81550 (4.6.6)
3.5.7	Heat Resistance	No cracking, softening, blistering, flowing, distorting, or charring	AS81550 (4.6.8)
	Change in Hardness, max Change in Weight, max Change in Volume, max	10 points 3% 5%	ASTM D2240 ASTM D471 ASTM D471
3.5.8	Fungus Resistance	Shall not support the growth of fungus	MIL-STD-810, Method 508 AS81550 (4.6.7)
3.5.9	Adhesion, min	2 pounds/per inch width	AS5127/1 (8.1) AS81550 (4.6.9)
3.5.10	Repairability, min Standard Cure Heat Aged at 392 °F (200 °C) for 72 hours	 2 pounds/per inch width 2 pounds/per inch width	AS81550 (4.6.9.2)

TABLE 1 - PROPERTIES (CONTINUED)

Paragraph	Property	Requirement	Test Procedures (Paragraph)
3.5.11	Volume Resistivity, min 1/		ASTM D257 AS81550 (4.6.4)
	At Standard Conditions	1 x 10^{13} ohm-cm	
	At 392 °F (200 °C)	1 x 10^{12} ohm-cm	
3.5.12	Dielectric Constant, max		AS81550 (4.6.5)
	1 KHz	3.5	
	1 MHz	3.8	
	10 MHz	5.0	
3.5.13	Dissipation Factor, max		AS81550 (4.6.5)
	1 KHz	0.005	
	1 MHz	0.003	
	10 MHz	0.005	
3.5.14	Thermal Shock 10 cycles from 311 °F (155 °C) to -67 °F (-55 °C)	Shall not rupture	AS81550 (4.6.14)
3.5.15	Water Absorption, max		AS81550 (4.6.11)
	72 hour immersion at 140 °F (60 °C)		
	Change in Hardness, max	±10 points, Durometer A	ASTM D2240
	Change in Weight, max	2%	ASTM D471
	Change in Volume, max	3%	ASTM D471
3.5.16	Shrinkage, max		AS81550 (4.6.10)
3.5.16.1	Standard Cure		
	Type I	2%	
	Type II	4%	
3.5.16.2	7 days at 392°F (200°C)		
	Type I	4%	
	Type II	7%	
3.5.17	Corrosion	No visual evidence of corrosion on the metal surface	AS81550 (4.6.12)
3.5.18	Hydrolytic Stability, min		ASTM D2240
	Type I	20 Durometer A	AS81550 (4.6.15)
	Type II	40 Durometer A	
3.5.19	Shelf Storage Life		AS81550 (4.6.16)
	Viscosity of Base Compound, max	15% increase from original	AS5127/1 (5.3) Use No. 2 spindle @ 4 rpm
	Hardness, max	±5 points from original, Durometer A	ASTM D2240

1/ Median values shall be recorded.

4. QUALITY ASSURANCE PROVISIONS

4.1 Responsibility for Inspection

Shall be in accordance with AS5502 (4.1).

4.2 Classification of Inspection

The inspection requirements specified herein are classified as follows:

a. First article inspection (see 4.3)

b. Conformance inspection (see 4.4).

4.3 First Article Inspection

The first article inspection shall consist of all inspections and tests as specified in Table 1.

4.4 Conformance Inspection

4.4.1 Lot Formation

Unless otherwise specified herein or in the contract or purchase order, a lot shall consist of all of the insulating compound formulated from the same components, under essentially the same conditions, forming part of one contract or order, and submitted for inspection at one time.

4.4.2 Sampling and Testing

A sufficient number of containers shall be selected at random to allow preparation of specimens for the Quality Conformance tests specified in Table 2. The samples selected shall be tested to the requirements specified in Table 2. Nonconformance of a test specimen to a single requirement shall be cause for rejection of the lot represented by the sample.

TABLE 2 - QUALITY CONFORMANCE TESTS

Test	Requirement Paragraph
Color	3.5.1
Viscosity of Base Compound	3.5.2
Specific Gravity	3.5.3
Application Life	3.5.4
Standard Cure	3.5.5
Dielectric Strength 1/	3.5.13
Volume Resistivity 1/, 2/	3.5.14

1/ Test data from every 5th lot of material is acceptable
2/ Room temperature only

4.5 Test Methods

4.5.1 Standard Tolerances

Unless otherwise specified herein, standard tolerances of AS5127 (3) “Standard Tolerances” shall apply.

4.5.2 Standard Conditions

Standard laboratory conditions shall be as specified in AS5127 (4.). Test specimens shall be prepared and immediately after completion of preparation, shall be placed under 77 °F (25 °C) and 50% ± 5% relative humidity to cure according to 4.5.4.

4.5.3 Preparation of Test Specimens

Except as specified herein, specimens shall be cast in a suitable mold, 6 x 6 x 0.075 inches (152 x 152 x 1.90 mm), to provide specific test specimens for testing. Separate molded panels shall be prepared for flammability (4.6.6) to provide specimens 6 x 0.5 x 0.5 inches (152 x 12.7 x 12.7 mm), and for fungus resistance (4.6.7) to provide specimens 4 x 4 x 0.125 inches (101.6 x 101.6 x 3.17 mm). The compound ingredients shall be mixed in accordance with the manufacturer's directions, then poured into the molds and cured as specified in 4.5.4.

4.5.4 Curing Conditions

Unless otherwise specified herein, all test specimens shall be cured as follows:

a. Type I - 168 hours at standard conditions.

b. Type II - 1 hour at 300 °F (149 °C).

All specimens shall be removed from the molds after completion of the above curing schedule and shall be held at standard conditions (4.5.2) for 1 to 7 days, prior to cutting samples or conducting tests.

4.6 Test Procedures

4.6.1 Specific Gravity

Three specimens, 1 x 2 x 0.075 inches (25.4 x 50.8 x 1.90 mm), shall be cured as specified in 4.5.4. The specific gravity of each specimen shall be determined in accordance with ASTM D792, Method A. The average value shall be recorded.

4.6.2 Standard Cure

Three cast specimens, 1 x 2 x 0.075 inches (25.4 x 50.8 x 1.90 mm), shall be cut from panels prepared and cured in accordance with 4.5.4. The specimens shall be placed one upon the other to form a sample 0.225 inch (5.71 mm) thick. Five instantaneous measurements of hardness shall be made on this sample using a Type A Durometer in accordance with ASTM D2240.

4.6.3 Dielectric Strength

Three disk specimens, not less than 3 inches (76.2 mm) in diameter and approximately 0.075 inch (1.90 mm) thick, shall be cut from panels, molded and cured in accordance with 4.5.4. Dielectric strength determinations shall be made in accordance with ASTM D149, or equivalent. Electrodes, 0.250 inch (6.35 mm) in diameter, shall be used and the test shall be made under oil at a frequency not exceeding 100 Hz. The voltage shall be increased uniformly at the rate of 500 V per second.

4.6.4 Volume Resistivity

Three disk specimens, 4 inches (101.6 mm) in diameter and approximately 0.075 inch (1.90 mm) thick, shall be cut from panels prepared and cured as specified in 4.5.4. Resistivity tests and calculations shall be conducted in accordance with ASTM D257 using a Keithley Model 6517A Electrometer and Model 8009 Resistivity Test Fixture or equivalent instrument, with a test voltage of 500 V. Readings shall be made 1 minute after application of current. Lead foil electrodes shall be disks, 2 inches (50.8 mm) in diameter, centrally located on one face of the specimen. The guard electrode shall be a concentric ring of 2.281 inches (57.9 mm) inside diameter and with an outside diameter equal to that of the specimen. The unguarded electrode shall be a foil disk 4 inches (101.6 mm) in diameter applied to the opposite side of the specimen. The test current shall be introduced to the guarded electrode, the guard electrode, and the unguarded electrode by means of a brass disk 2 inches (50.8 mm) in diameter by 1 inch (25.4 mm) thick, a brass ring 2.313 inches (58.75 mm) inside diameter by 4 inches (101.6 mm) outside diameter by 0.125 inch (3.17 mm) thick, and a brass disk 4 inches (101.6 mm) in diameter, respectively.

4.6.5 Dielectric Constant and Dissipation Factor

Three disk specimens, 4 inches (101.6 mm) in diameter and approximately 0.075 inch (1.90 mm) thick, shall be cut from panels prepared and cured as specified in 4.5.4. Tests shall be conducted in accordance with ASTM D150, or equivalent. Lead foil electrodes shall be used and applied to the specimen. The electrodes shall consist of two lead foil disks; the upper disk shall be 2 inches (50.8 mm) in diameter and 1 inch (25.4 mm) in thickness, and the lower disk shall be 4 inches (101.6 mm) in diameter. The test current shall be introduced to the foil through two brass disks. The specimens shall be tested at frequencies of 1 KHz, 1 MHz, and 10 MHz. Calculation shall include corrections for edge and ground capacitance effects.

4.6.6 Flammability

Three specimens, 6 x 0.5 x 0.5 inch (152 x 12.7 x 12.7 mm), cut from panels cured in accordance with 4.5.4, shall be tested in accordance with ASTM D635, except that the specimens shall be placed directly on the wire mesh and the flame applied only once.

4.6.7 Fungus Resistance

Three specimens, 4 x 4 x 0.125 inch (101.6 x 101.6 x 3.17 mm), shall be cured as specified in 4.5.4. Tests shall be conducted in accordance with MIL-STD-810, Method 508 except that distilled water with a pH 5.8 to 7.2 at 72 to 89 °F (22 to 32 °C) may be used in spore suspension preparation and test conditions shall be 86 °F (30 °C) with a relative humidity of 95% ± 5% for 28 days.

4.6.8 Heat Resistance

Heat resistance tests shall be conducted on the specimens used for the Standard Cure (4.6.2) hardness test, except that Type I specimens shall be conditioned 1 hour at 212 °F (100 °C) prior to heat exposure and the resulting hardness value used as the initial hardness. All specimens shall be placed in an air circulating oven and conditioned for 168 hours at 392 °F (200 °C). The specimens shall be removed from the oven and returned to 77 °F (25 °C) in a desiccator and examined. Changes in weight and volume shall be determined in accordance with ASTM D471.

4.6.9 Adhesion

4.6.9.1 Preparation of Panels

A coating of compound, 0.150 inch ± 0.025 inch (38.1 mm ± 0.63 mm) thick, shall be applied to the primed side (as recommended by the manufacturer) of two 3 x 6 x 0.0625 inch (76.2 x 152.4 x 1.57 mm) aluminum alloy panels conforming to AMS4049 (see Figure 1). One strip, 3.750 inch (95.2 mm) wide and 15 inches (381 mm) long, of a thin flexible metallic foil or tape (primed as specified by the manufacturer) shall be placed primed side down on the surface of the freshly applied compound. The strip shall be placed so that it covers the mold and compound (Figure 1) leaving a 6-inch (152.4-mm) tail. Two panels shall be prepared and cured as specified in 4.5.4. One panel shall be maintained at standard conditions (4.5.2) and the other oven aged for 72 hours at 392 °F (200 °C).

4.6.9.1.1 Testing of Panels

Two 1-inch (25.4-mm) wide strips shall be cut lengthwise through the metallic foil or tape and compound to the panel surface and extended the full length of the loose end of the metallic foil or tape. The edges of the panel shall not be used as an edge of the test strip. The panels shall be individually tested in accordance with AS5127/1 (8.1).

4.6.9.2 Repairability

A coating of compound, approximately 0.150 inch ± 0.025 inch (38.1 mm ± 0.63 mm) thick, shall be applied to the primed side (as specified by the manufacturer) of two 3 x 6 x 0.0625 inch (76.2 x 152.4 1.57 mm) aluminum alloy panels conforming to AMS4049 (see Figure 1). Two panels of the type undergoing test shall be prepared and cured as specified in 4.5.4. One cured panel shall act as control, the other shall be oven aged for 72 hours ± 2 hours at 400 °F ± 5 °F (200 °C ± 3 °C). The surface of all panels shall be scuffed with fine sandpaper. All panels shall then be recoated with newly mixed compound, approximately 0.125 inch ± 0.030 inch (3.17 mm ± 0.76 mm) thick. One strip, 3.750 inches (95.3 mm) wide, of a thin flexible metallic foil or tape (primed as specified by the manufacturer) shall be placed primed side down on the surface of the freshly applied compound. The strip shall be placed so that it covers the mold and compound (see Figure 1) leaving a 6-inch long tail. The panels shall be cured as specified in 4.5.4, and tested in accordance with 4.6.12.1.1.

4.6.10 Shrinkage

A cubical mold, with cover, approximately 1.0 inch (25.4 mm) on each side, shall be constructed. Its volume at standard conditions shall be determined. It shall be utilized for the preparation of a cured compound specimen as specified in 4.5.4. After filling the mold cavity, and then placing the cover on the compound, the specimen shall be subjected to cure as specified in 4.5.4, and then placed in a circulating air oven at 392 °F ± 5 °F (200 °C ± 3 °C) for 7 days. It shall then be removed, cooled, examined, and its volume at standard conditions (4.5.2) determined by the water displacement method. The percent shrinkage shall be calculated as follows:

$$\text{Percent Shrinkage} = \frac{(V1 - V2) \times 100}{V1}$$

where:

V1 = volume of mold

V2 = final volume of sealing compound

4.6.11 Water Absorption

Three specimens, measuring 1 x 2 x 0.075 inch (25.4 x 50.8 X 1.90 mm), cut from slabs cured in accordance with 4.5.4, shall be immersed in distilled water for 72 hours at 140 °F (60 °C), except that Type I specimens shall be conditioned for 1 hour at 212 °F (100 °C) prior to immersion and the resulting hardness used as the initial value. The specimens shall be tested for changes in hardness in accordance with ASTM D2240. Change in weight and volume shall be determined in accordance with ASTM D471.

4.6.12 Corrosion

Prepare two 1.5-inch (38.1-mm) lengths of AWG size 10 copper wire conforming to A-A-59544, by first removing all insulation and then cleaning with a degreasing agent and buffing if necessary to a bright copper finish. A previously cured section of the same silicone compound undergoing test shall be placed in the mold as a support for the wires. The wires used for this test shall not be treated with a primer. Encapsulate these two wire specimens centrally into a suitable mold 1 x 2 x 0.5 inch (25.4 x 50.8 x 12.7 mm) (see Figure 2). Compounds for Type I and Type II shall be cured in accordance with 4.5.4. Place the specimen along with an un-potted 1.5 inch (38.1 mm) length of the above specified wire (control) into an environment of 95 to 98% relative humidity and 120 °F (49 °C) for 28 days. At the end of this period, the mold shall be slit open and the encapsulated wire compared with the control.

4.6.13 Thick Section Cure and Reversion Resistance

4.6.13.1 Thick Section Cure

Prepare two metal containers for the confinement of the catalyzed compound. The containers shall be metal tubes 4.250 inches (107.9 mm) long, threaded at both ends, having an inner diameter of 2.5 inches (63.5 mm) and a wall thickness suitable for threading. Metal screw caps and aluminum foil gaskets which provide an air-tight seal shall be used for end closures and designed so that the total inside height of the capped tube does not exceed 4.250 inches (107.9 mm). Cap one end of each tube and pour the mixed and deaerated catalyzed sealing compound to a depth of 3.250 inches (82.5 mm). Allow the material to cure as specified in 4.5.4 with the container top uncapped. Remove the bottom cap, and obtain the hardness in the center area of the surface in accordance with ASTM D2240. Immediately following the hardness determination, the ends can be recapped and the specimen used for reversion resistance testing (4.6.13.2).

4.6.13.2 Reversion Resistance

Condition the thick section cure specimens (4.6.13.1) at 400 °F (200 °C) for 7 days. At the completion of the heat aging period allow the test fixture to cool at standard conditions (4.5.2) for 24 hours. Obtain hardness readings in accordance with ASTM D2240 in the same area where the original hardness was determined. Tests shall be made in duplicate. If the compound fails in only one specimen, repeat the test. A second failure shall be cause for rejection.

4.6.14 Thermal Shock

4.6.14.1 Apparatus

The apparatus shall be as follows:

a. An analytical type, electrically heated oven so designed that specimens can be introduced and removed with a minimum drop in temperature. The oven shall be held at 310 °F (154 °C).

b. An isopropyl alcohol dry ice bath maintained at -67 °F (-55 °C).

4.6.14.2 Specimens

Five specimens shall be cast in molds similar to the molds shown in Figure 3. In preparing the mold, the glass tube shall be coated with a release agent and the 1 inch long, 0.750 inch (19.05 mm) cold drawn low carbon steel hex bar shall be polished with number "0" emery cloth and washed with a 50:50 xylene/isopropyl alcohol mixture. The curing procedure shall be as specified in 4.5.4.

4.6.14.3 Procedure

Cured specimens shall be placed in the oven for 30 +1/-0 minutes, at the specified temperature, removed, then immediately plunged into the dry ice alcohol bath and left for 10 +1/-0 minutes. After each cycle, the alcohol on the specimens shall be quickly wiped off and the next cycle started. Cycling shall continue until the specimen fails or 10 cycles have been completed. Specimens shall be observed after each phase of the cycling to determine the number of cycles which are required to produce cracks or other indications of failure in the casting. If four of the five specimens complete the 10 cycles, the compound shall be considered as having passed the test.

4.6.15 Hydrolytic Stability, Physical

4.6.15.1 Specimen Preparation

Sufficient base compound and curing agent shall be mixed to prepare three molded test specimens, 2.5 inches (63.5 mm) in diameter by 0.5 inch (12.7 mm) thick, cured as specified in 4.5.4. Instantaneous hardness shall be determined using a Type A Durometer in accordance with ASTM D2240. Hardness shall be determined at the same locations before and after exposure.

4.6.15.2 Procedure

After determining hardness before exposure, the specimens shall be placed vertically in a suitable holder, on a tray in a suitable glass desiccator. The desiccator shall contain a 22% by weight glycerine in water solution which will produce a relative humidity of 95% at the test temperature. The desiccator containing the specimens shall be closed and inserted into an air circulating oven maintained at 160 °F (71 °C) for a period of 120 days. At the end of the exposure period, the desiccator shall be removed from the oven and cooled to standard conditions (4.5.2) for 16 to 24 hours. Hardness shall be determined as specified in 4.6.15.1.

4.6.16 Shelf Storage Life

One pint of the base compound together with its curing agent shall be stored separately in their "as received" containers for 4 months (time shall be counted from date of shipment). The storage temperature shall be as specified by the manufacturer, but shall not be below standard conditions of 4.5.2. At the end of the storage period, the compound shall be tested for viscosity (3.5.2), and standard cure hardness (3.5.5).

5. PREPARATION FOR DELIVERY

Shall be in accordance with AS5502 (5.).

5.1 Identification

Each base compound container shall be durably and legibly marked and shall include the following information:

INSULATING COMPOUND, ELECTRICAL, EMBEDDING, REVERSION RESISTANT SILICONE
AS81550A
Type, as applicable
Curing agent for (insert product designation for base compound, when applicable)
Primer identification (when applicable)
Date of shipment
Manufacturer's name and address
Manufacturer's product designation
Manufacturer's batch identification or lot number
Contract number/purchase order number
Expiration date
Manufacturer's recommended storage temperature
Net contents

5.2 Instructions for Use

The supplier of the silicone compound shall furnish instructions with each shipment, which contain:

a. Storage stability, uncatalyzed, indicating the optimum storage temperature and conditions of storage to obtain maximum stability.

b. Complete mixing information to provide for optimum product performance when the material is cured at the manufacturer's time and temperatures.

6. ACKNOWLEDGMENT

Shall be in accordance with AS5502 (6.).

7. REJECTIONS

Shall be in accordance with AS5502 (7.).

8. NOTES

8.1 A change bar (l) located in the left margin is for the convenience of the user in locating areas where technical revisions, not editorial changes, have been made to the previous issue of this document. An (R) symbol to the left of the document title indicates a complete revision of the document, including technical revisions. Change bars and (R) are not used in original publications, nor in documents that contain editorial changes only.

8.2 Thermal Expansion

Because of high temperature expansion, Type I and II compounds shall not completely fill a given closed container.

8.3 Adhesion

To obtain adhesion, the primer recommended by the manufacturer shall be applied to surfaces to which a bond is required unless otherwise stated by the manufacturer.

8.4 Inhibition of Cure

Some insulation material may inhibit the cure of AS81550 compounds. Materials which may cause inhibition include amine epoxy curing agents, sulfur containing rubbers, organo-tin catalyst cured silicone rubbers and certain nitrogen compounds. To prevent inhibition, the materials may be coated with a sealer recommended by the manufacturer. Sealers and primers must have equivalent electrical insulating properties as the basic compound since primer and sealer films can contribute to electrical leakage in a potted or encapsulated unit.

8.5 Dimensions and properties in inch/pound units and the Fahrenheit temperatures are primary; dimensions and properties in SI units and the Celsius temperatures are shown as the approximate equivalents of the primary units and are presented only for information.

8.6 Purchase documents should specify not less than the following:

AS81550A
Type of insulating compound desired
Type and size of containers desired
Quantity of containers
Any special marking or packaging required
First article inspection requirement
Test reports