Safety Data Sheet

Document Group:	30-3779-3	**Version Number:**	2.02
Issue Date:	05/08/17	**Supercedes Date:**	02/03/15

SECTION 1: Identification

1.1. Product identifier
3M™ Aerospace Sealant AC-770 B-2 PMF

Product Identification Numbers
70-0052-0447-7, 70-0052-0449-3, 70-0052-0450-1, 70-0052-0455-0, 70-0052-0456-8, 70-0052-0681-1, 70-0052-0682-9

1.2. Recommended use and restrictions on use

Recommended use
For industrial or professional use only., Sealant

1.3. Supplier's details

MANUFACTURER:	3M
DIVISION:	Automotive and Aerospace Solutions Division
ADDRESS:	3M Center, St. Paul, MN 55144-1000, USA
Telephone:	1-888-3M HELPS (1-888-364-3577)

1.4. Emergency telephone number
1-800-364-3577 or (651) 737-6501 (24 hours)

SECTION 2: Hazard identification

2.1. Hazard classification
Skin Sensitizer: Category 1.
Specific Target Organ Toxicity (repeated exposure): Category 1.

2.2. Label elements
Signal word
Danger

Symbols
Exclamation mark | Health Hazard |

Pictograms

Hazard Statements
May cause an allergic skin reaction.

Causes damage to organs through prolonged or repeated exposure:
nervous system |
respiratory system |

Precautionary Statements

Prevention:
Do not breathe dust/fume/gas/mist/vapors/spray.
Wear protective gloves.
Do not eat, drink or smoke when using this product.
Wash thoroughly after handling.
Contaminated work clothing must not be allowed out of the workplace.

Response:
IF ON SKIN: Wash with plenty of soap and water.
If skin irritation or rash occurs: Get medical advice/attention.
Wash contaminated clothing before reuse.
Get medical advice/attention if you feel unwell.

Disposal:
Dispose of contents/container in accordance with applicable local/regional/national/international regulations.

2.3. Hazards not otherwise classified

9% of the mixture consists of ingredients of unknown acute oral toxicity.
9% of the mixture consists of ingredients of unknown acute dermal toxicity.

SECTION 3: Composition/information on ingredients

Ingredient	C.A.S. No.	% by Wt
POLYSULFIDE RUBBER	68611-50-7	65 - 75
CALCIUM CARBONATE	471-34-1	10 - 20
MANGANESE DIOXIDE	1313-13-9	1 - 10 Trade Secret *
NON-HAZARDOUS COMPONENTS	Trade Secret*	0 - 10
AMORPHOUS SILICA	67762-90-7	0.1 - 2
PHENOL-FORMALDEHYDE RESIN	28470-78-2	0.5 - 2
EPOXY RESIN	25085-99-8	0.1 - 1 Trade Secret *
PHENOL-FORMALDEHYDE POLYMER	9003-35-4	0.01 - 0.2 Trade Secret *
PHTHALIC ANHYDRIDE	85-44-9	< 0.1
SODIUM HYDROXIDE	1310-73-2	<= 0.1

*The specific chemical identity and/or exact percentage (concentration) of this composition has been withheld as a trade secret.

SECTION 4: First aid measures

4.1. Description of first aid measures

Inhalation:
Remove person to fresh air. If you feel unwell, get medical attention.

Skin Contact:
Immediately wash with soap and water. Remove contaminated clothing and wash before reuse. If signs/symptoms develop, get medical attention.

Eye Contact:
No need for first aid is anticipated.

If Swallowed:
Rinse mouth. If you feel unwell, get medical attention.

4.2. Most important symptoms and effects, both acute and delayed
See Section 11.1. Information on toxicological effects.

4.3. Indication of any immediate medical attention and special treatment required
Not applicable

SECTION 5: Fire-fighting measures

5.1. Suitable extinguishing media
In case of fire: Use a fire fighting agent suitable for ordinary combustible material such as water or foam to extinguish.

5.2. Special hazards arising from the substance or mixture
None inherent in this product.

Hazardous Decomposition or By-Products

Substance	Condition
Formaldehyde	During Combustion
Carbon monoxide	During Combustion
Carbon dioxide	During Combustion

5.3. Special protective actions for fire-fighters
No special protective actions for fire-fighters are anticipated.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures
Evacuate area. Ventilate the area with fresh air. For large spill, or spills in confined spaces, provide mechanical ventilation to disperse or exhaust vapors, in accordance with good industrial hygiene practice.

6.2. Environmental precautions
Avoid release to the environment.

6.3. Methods and material for containment and cleaning up
Contain spill. Working from around the edges of the spill inward, cover with bentonite, vermiculite, or commercially available inorganic absorbent material. Mix in sufficient absorbent until it appears dry. Remember, adding an absorbent material does not remove a physical, health, or environmental hazard. Collect as much of the spilled material as possible.

Place in a closed container approved for transportation by appropriate authorities. Clean up residue with an appropriate solvent selected by a qualified and authorized person. Ventilate the area with fresh air. Read and follow safety precautions on the solvent label and SDS. Seal the container. Dispose of collected material as soon as possible.

SECTION 7: Handling and storage

7.1. Precautions for safe handling
Do not breathe dust/fume/gas/mist/vapors/spray. Do not get in eyes, on skin, or on clothing. Do not eat, drink or smoke when using this product. Wash thoroughly after handling. Contaminated work clothing should not be allowed out of the workplace. Wash contaminated clothing before reuse.

7.2. Conditions for safe storage including any incompatibilities
Store away from heat. Store away from acids. Store away from strong bases.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Occupational exposure limits
If a component is disclosed in section 3 but does not appear in the table below, an occupational exposure limit is not available for the component.

Ingredient	C.A.S. No.	Agency	Limit type	Additional Comments
SODIUM HYDROXIDE	1310-73-2	ACGIH	CEIL:2 mg/m3	
SODIUM HYDROXIDE	1310-73-2	OSHA	TWA:2 mg/m3	
MANGANESE COMPOUNDS	1313-13-9	OSHA	CEIL(as Mn):5 mg/m3	
MANGANESE, INORGANIC COMPOUNDS	1313-13-9	ACGIH	TWA(as Mn, inhalable fraction):0.1 mg/m3;TWA(as Mn, respirable fraction):0.02 mg/m3	A4: Not class. as human carcin
Limestone	471-34-1	OSHA	TWA(as total dust):15 mg/m3;TWA(respirable fraction):5 mg/m3	
SILICA, AMORPHOUS	67762-90-7	OSHA	TWA concentration:0.8 mg/m3;TWA:20 millions of particles/cu. ft.	
PHTHALIC ANHYDRIDE	85-44-9	ACGIH	TWA:1 ppm	A4: Not class. as human carcin, Dermal/Respiratory Sensitizer
PHTHALIC ANHYDRIDE	85-44-9	OSHA	TWA:12 mg/m3(2 ppm)	

ACGIH : American Conference of Governmental Industrial Hygienists
AIHA : American Industrial Hygiene Association
CMRG : Chemical Manufacturer's Recommended Guidelines
OSHA : United States Department of Labor - Occupational Safety and Health Administration
TWA: Time-Weighted-Average
STEL: Short Term Exposure Limit
CEIL: Ceiling

8.2. Exposure controls

8.2.1. Engineering controls
Use general dilution ventilation and/or local exhaust ventilation to control airborne exposures to below relevant Exposure Limits and/or control dust/fume/gas/mist/vapors/spray. If ventilation is not adequate, use respiratory protection equipment.

8.2.2. Personal protective equipment (PPE)

Eye/face protection

Select and use eye/face protection to prevent contact based on the results of an exposure assessment. The following eye/face protection(s) are recommended:
Safety Glasses with side shields

Skin/hand protection
Select and use gloves and/or protective clothing approved to relevant local standards to prevent skin contact based on the results of an exposure assessment. Selection should be based on use factors such as exposure levels, concentration of the substance or mixture, frequency and duration, physical challenges such as temperature extremes, and other use conditions. Consult with your glove and/or protective clothing manufacturer for selection of appropriate compatible gloves/protective clothing.
Gloves made from the following material(s) are recommended: Polymer laminate

If this product is used in a manner that presents a higher potential for exposure (eg. spraying, high splash potential etc.), then use of protective coveralls may be necessary. Select and use body protection to prevent contact based on the results of an exposure assessment. The following protective clothing material(s) are recommended: Apron - polymer laminate

Respiratory protection

An exposure assessment may be needed to decide if a respirator is required. If a respirator is needed, use respirators as part of a full respiratory protection program. Based on the results of the exposure assessment, select from the following respirator type(s) to reduce inhalation exposure:
Half facepiece or full facepiece air-purifying respirator suitable for organic vapors and particulates

For questions about suitability for a specific application, consult with your respirator manufacturer.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

General Physical Form:	Liquid
Odor, Color, Grade:	Sulphurous odor; dark paste
Odor threshold	*No Data Available*
pH	*Not Applicable*
Melting point	*Not Applicable*
Boiling Point	*No Data Available*
Flash Point	>=200 ºF [*Test Method:*Closed Cup]
Evaporation rate	*No Data Available*
Flammability (solid, gas)	Not Applicable
Flammable Limits(LEL)	*No Data Available*
Flammable Limits(UEL)	*No Data Available*
Vapor Pressure	*No Data Available*
Vapor Density	*No Data Available*
Density	1.1 g/ml
Specific Gravity	1.1 [*Ref Std:*WATER=1]
Solubility in Water	Nil
Solubility- non-water	*No Data Available*
Partition coefficient: n-octanol/ water	*No Data Available*
Autoignition temperature	*No Data Available*
Decomposition temperature	*No Data Available*
Viscosity	*No Data Available*
Volatile Organic Compounds	5.4 g/l [*Test Method:*calculated SCAQMD rule 443.1]
VOC Less H2O & Exempt Solvents	5.4 g/l [*Test Method:*calculated SCAQMD rule 443.1]

SECTION 10: Stability and reactivity

10.1. Reactivity
This material may be reactive with certain agents under certain conditions - see the remaining headings in this section.

10.2. Chemical stability
Stable.

10.3. Possibility of hazardous reactions
Hazardous polymerization will not occur.

10.4. Conditions to avoid
Heat

10.5. Incompatible materials
Reducing agents
Strong bases
Strong acids

10.6. Hazardous decomposition products

Substance	Condition
None known.	

Refer to section 5.2 for hazardous decomposition products during combustion.

SECTION 11: Toxicological information

The information below may not be consistent with the material classification in Section 2 if specific ingredient classifications are mandated by a competent authority. In addition, toxicological data on ingredients may not be reflected in the material classification and/or the signs and symptoms of exposure, because an ingredient may be present below the threshold for labeling, an ingredient may not be available for exposure, or the data may not be relevant to the material as a whole.

11.1. Information on Toxicological effects

Signs and Symptoms of Exposure

Based on test data and/or information on the components, this material may produce the following health effects:

Inhalation:
Respiratory Tract Irritation: Signs/symptoms may include cough, sneezing, nasal discharge, headache, hoarseness, and nose and throat pain.

May cause additional health effects (see below).

Skin Contact:
Contact with the skin during product use is not expected to result in significant irritation. Allergic Skin Reaction (non-photo induced): Signs/symptoms may include redness, swelling, blistering, and itching.

Eye Contact:
Contact with the eyes during product use is not expected to result in significant irritation.

Ingestion:
No known health effects.

Additional Health Effects:

Prolonged or repeated exposure may cause target organ effects:
Neurological Effects: Signs/symptoms may include personality changes, lack of coordination, sensory loss, tingling or numbness of the extremities, weakness, tremors, and/or changes in blood pressure and heart rate.

Respiratory Effects: Signs/symptoms may include cough, shortness of breath, chest tightness, wheezing, increased heart rate, bluish colored skin (cyanosis), sputum production, changes in lung function tests, and/or respiratory failure.

Toxicological Data
If a component is disclosed in section 3 but does not appear in a table below, either no data are available for that endpoint or the data are not sufficient for classification.

Acute Toxicity

Name	Route	Species	Value
Overall product	Dermal		No data available; calculated ATE >5,000 mg/kg
Overall product	Ingestion		No data available; calculated ATE >5,000 mg/kg
POLYSULFIDE RUBBER	Dermal	Rat	LD50 > 7,800 mg/kg
POLYSULFIDE RUBBER	Ingestion	Rat	LD50 > 5,000 mg/kg
CALCIUM CARBONATE	Dermal	Rat	LD50 > 2,000 mg/kg
CALCIUM CARBONATE	Inhalation-Dust/Mist (4 hours)	Rat	LC50 3 mg/l
CALCIUM CARBONATE	Ingestion	Rat	LD50 6,450 mg/kg
MANGANESE DIOXIDE	Dermal	Rat	LD50 2,000 mg/kg
MANGANESE DIOXIDE	Inhalation-Dust/Mist (4 hours)	Rat	LC50 > 1.5 mg/l
MANGANESE DIOXIDE	Ingestion	Rat	LD50 > 2,197 mg/kg
AMORPHOUS SILICA	Dermal	Rabbit	LD50 > 5,000 mg/kg
AMORPHOUS SILICA	Inhalation-Dust/Mist (4 hours)	Rat	LC50 > 0.691 mg/l
AMORPHOUS SILICA	Ingestion	Rat	LD50 > 5,110 mg/kg
PHENOL-FORMALDEHYDE RESIN	Dermal		LD50 estimated to be > 5,000 mg/kg
PHENOL-FORMALDEHYDE RESIN	Inhalation-Dust/Mist		LC50 estimated to be > 12.5 mg/l
PHENOL-FORMALDEHYDE RESIN	Ingestion		LD50 estimated to be > 5,000 mg/kg
EPOXY RESIN	Dermal	Rat	LD50 > 1,600 mg/kg
EPOXY RESIN	Ingestion	Rat	LD50 > 1,000 mg/kg
PHENOL-FORMALDEHYDE POLYMER	Dermal	Rat	LD50 > 2,000 mg/kg
PHENOL-FORMALDEHYDE POLYMER	Ingestion	Rat	LD50 > 2,900 mg/kg
PHTHALIC ANHYDRIDE	Dermal		estimated to be > 5,000 mg/kg
PHTHALIC ANHYDRIDE	Inhalation-Dust/Mist		estimated to be > 12.5 mg/l
PHTHALIC ANHYDRIDE	Ingestion		estimated to be 300 - 2,000 mg/kg

ATE = acute toxicity estimate

Skin Corrosion/Irritation

Name	Species	Value
POLYSULFIDE RUBBER	Rabbit	No significant irritation
CALCIUM CARBONATE	Rabbit	No significant irritation
AMORPHOUS SILICA	Rabbit	No significant irritation
PHENOL-FORMALDEHYDE RESIN	Professional judgeme	No significant irritation

	nt	
EPOXY RESIN	Rabbit	Mild irritant
PHENOL-FORMALDEHYDE POLYMER	Human and animal	Mild irritant
SODIUM HYDROXIDE	Rabbit	Corrosive

Serious Eye Damage/Irritation

Name	Species	Value
POLYSULFIDE RUBBER	Rabbit	No significant irritation
CALCIUM CARBONATE	Rabbit	No significant irritation
AMORPHOUS SILICA	Rabbit	No significant irritation
PHENOL-FORMALDEHYDE RESIN	Professional judgement	Mild irritant
EPOXY RESIN	Rabbit	Moderate irritant
PHENOL-FORMALDEHYDE POLYMER	Human and animal	Moderate irritant
SODIUM HYDROXIDE	Rabbit	Corrosive

Skin Sensitization

Name	Species	Value
POLYSULFIDE RUBBER		Not classified
AMORPHOUS SILICA	Human and animal	Not classified
EPOXY RESIN	Human and animal	Sensitizing
PHENOL-FORMALDEHYDE POLYMER	Human and animal	Sensitizing
SODIUM HYDROXIDE	Human	Not classified

Respiratory Sensitization

Name	Species	Value
EPOXY RESIN	Human	Not classified
PHENOL-FORMALDEHYDE POLYMER	Human	Not classified

Germ Cell Mutagenicity

Name	Route	Value
AMORPHOUS SILICA	In Vitro	Not mutagenic
EPOXY RESIN	In vivo	Not mutagenic
EPOXY RESIN	In Vitro	Some positive data exist, but the data are not sufficient for classification
SODIUM HYDROXIDE	In Vitro	Not mutagenic

Carcinogenicity

Name	Route	Species	Value
AMORPHOUS SILICA	Not Specified	Mouse	Some positive data exist, but the data are not sufficient for classification
EPOXY RESIN	Dermal	Mouse	Some positive data exist, but the data are not sufficient for classification

Reproductive Toxicity

Reproductive and/or Developmental Effects

Name	Route	Value	Species	Test Result	Exposure Duration
CALCIUM CARBONATE	Ingestion	Not classified for development	Rat	NOAEL 625 mg/kg/day	premating & during gestation
AMORPHOUS SILICA	Ingestion	Not classified for female reproduction	Rat	NOAEL 509 mg/kg/day	1 generation
AMORPHOUS SILICA	Ingestion	Not classified for male reproduction	Rat	NOAEL 497 mg/kg/day	1 generation
AMORPHOUS SILICA	Ingestion	Not classified for development	Rat	NOAEL 1,350 mg/kg/day	during organogenesis
EPOXY RESIN	Ingestion	Not classified for female reproduction	Rat	NOAEL 750 mg/kg/day	2 generation
EPOXY RESIN	Ingestion	Not classified for male reproduction	Rat	NOAEL 750 mg/kg/day	2 generation
EPOXY RESIN	Dermal	Not classified for development	Rabbit	NOAEL 300 mg/kg/day	during organogenesis
EPOXY RESIN	Ingestion	Not classified for development	Rat	NOAEL 750 mg/kg/day	2 generation

Target Organ(s)

Specific Target Organ Toxicity - single exposure

Name	Route	Target Organ(s)	Value	Species	Test Result	Exposure Duration
CALCIUM CARBONATE	Inhalation	respiratory system	Not classified	Rat	NOAEL 0.812 mg/l	90 minutes
PHENOL-FORMALDEHYDE POLYMER	Inhalation	respiratory irritation	Some positive data exist, but the data are not sufficient for classification	Human and animal	NOAEL Not available	
SODIUM HYDROXIDE	Inhalation	respiratory irritation	May cause respiratory irritation	Human	NOAEL Not available	

Specific Target Organ Toxicity - repeated exposure

Name	Route	Target Organ(s)	Value	Species	Test Result	Exposure Duration
CALCIUM CARBONATE	Inhalation	respiratory system	Not classified	Human	NOAEL Not available	occupational exposure
AMORPHOUS SILICA	Inhalation	respiratory system | silicosis	Not classified	Human	NOAEL Not available	occupational exposure
EPOXY RESIN	Dermal	liver	Not classified	Rat	NOAEL 1,000 mg/kg/day	2 years
EPOXY RESIN	Dermal	nervous system	Not classified	Rat	NOAEL 1,000 mg/kg/day	13 weeks
EPOXY RESIN	Ingestion	auditory system | heart | endocrine system | hematopoietic system | liver | eyes | kidney and/or bladder	Not classified	Rat	NOAEL 1,000 mg/kg/day	28 days
PHENOL-FORMALDEHYDE POLYMER	Inhalation	respiratory system	Some positive data exist, but the data are not sufficient for classification	Human	NOAEL Not available	occupational exposure

Aspiration Hazard

For the component/components, either no data are currently available or the data are not sufficient for classification.

Please contact the address or phone number listed on the first page of the SDS for additional toxicological information on this material and/or its components.

SECTION 12: Ecological information

Ecotoxicological information

Please contact the address or phone number listed on the first page of the SDS for additional ecotoxicological information on this material and/or its components.

Chemical fate information

Please contact the address or phone number listed on the first page of the SDS for additional chemical fate information on this material and/or its components.

SECTION 13: Disposal considerations

13.1. Disposal methods
Dispose of contents/ container in accordance with the local/regional/national/international regulations.

Dispose of completely cured (or polymerized) material in a permitted industrial waste facility. As a disposal alternative, incinerate uncured product in a permitted waste incineration facility. Proper destruction may require the use of additional fuel during incineration processes. Combustion products will include halogen acid (HCl/HF/HBr). Facility must be capable of handling halogenated materials. If no other disposal options are available, waste product that has been completely cured or polymerized may be placed in a landfill properly designed for industrial waste. Empty drums/barrels/containers used for transporting and handling hazardous chemicals (chemical substances/mixtures/preparations classified as Hazardous as per applicable regulations) shall be considered, stored, treated & disposed of as hazardous wastes unless otherwise defined by applicable waste regulations. Consult with the respective regulating authorities to determine the available treatment and disposal facilities.

EPA Hazardous Waste Number (RCRA): Not regulated

SECTION 14: Transport Information

For Transport Information, please visit http://3M.com/Transportinfo or call 1-800-364-3577 or 651-737-6501.

SECTION 15: Regulatory information

15.1. US Federal Regulations
Contact 3M for more information.

311/312 Hazard Categories:

Fire Hazard - No Pressure Hazard - No Reactivity Hazard - No Immediate Hazard - Yes Delayed Hazard - Yes

EPCRA 311/312 Hazard Classifications (effective January 1, 2018):

Physical Hazards
Not applicable

Health Hazards
Specific target organ toxicity (single or repeated exposure)

Section 313 Toxic Chemicals subject to the reporting requirements of that section and 40 CFR part 372 (EPCRA):

Ingredient	C.A.S. No	% by Wt
MANGANESE DIOXIDE (MANGANESE COMPOUNDS)	1313-13-9	1 - 10

15.2. State Regulations
Contact 3M for more information.

15.3. Chemical Inventories
The components of this product are in compliance with the chemical notification requirements of TSCA.

Contact 3M for more information.

15.4. International Regulations
Contact 3M for more information.

This SDS has been prepared to meet the U.S. OSHA Hazard Communication Standard, 29 CFR 1910.1200.

SECTION 16: Other information

NFPA Hazard Classification
Health: 2 **Flammability:** 1 **Instability:** 0 **Special Hazards:** None

National Fire Protection Association (NFPA) hazard ratings are designed for use by emergency response personnel to address the hazards that are presented by short-term, acute exposure to a material under conditions of fire, spill, or similar emergencies. Hazard ratings are primarily based on the inherent physical and toxic properties of the material but also include the toxic properties of combustion or decomposition products that are known to be generated in significant quantities.

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