MC10-0016-XX, Part A

SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: MC10-0016-XX, Part A

MANUFACTURER: MAST Technologies
ADDRESS: 6370 Nancy Ridge Dr., Suite 103
San Diego, CA 92121-3212

Emergency Phone: (858)452-1700 (regular 8-hour line)
San Diego, CA
Information Phone: (858)452-1700
San Diego, CA
Fax Line: (858)452-1702
San Diego, CA

Issue Date: 06/27/2011
Supersedes Date: N/A

Product Use: Part A for carbon loaded resistive MPS2 caulking kit.

SECTION 2: COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	CAS Number	Weight %
Carbon Black	1333-86-4	10-20%
Silicone Resin	Mixture	80-90%
Polydimethylsiloxane	63148-62-9	75% (of resin)
Silica, amorphous	07631-86-9	15% (of resin)
Tetra-n-propyl silicate**	00682-01-9	10% (of resin)
Acetone	67-64-1	2-10%

**n-propanol (00071-23-8) may be generated upon exposure to water or moist air.

Notes: See additional exposure information in Section 8, below.

SECTION 3: HAZARDS IDENTIFICATION

HMIS Classification: Health: 2, Flammability: 2, Reactivity: 0, Protection: See PPE Section 8.

EMERGENCY OVERVIEW:

Specific Physical Form: Medium viscosity caulk
Odor, Color, Grade: Characteristic silicone, black color
General Physical Form: Caulk

POTENTIAL HEALTH EFFECTS:

Eye Contact: Direct contact may cause temporary discomfort with mild redness, drying, and irritation when contacted by raw material, cured material, or sanding dust.

Skin Contact: May cause slight irritation and reddening when contacted by raw material, cured material, or sanding dust.

Inhalation: High concentrations of airborne dust may irritate the respiratory tract, including the nose, throat, and lungs. Symptoms may include coughing, nausea, headaches, or dizziness.

Ingestion: Ingestion may cause irritation to the gastrointestinal tract but is unlikely to occur in industrial or commercial use.

SECTION 4: FIRST AID MEASURES

Eye Contact: Immediately flush eyes with plenty of water. Remove contact lenses. Flush with water for at least 15 minutes while occasionally lifting lower and upper eyelids. If irritation persists seek medical attention.

Skin Contact: Remove contaminated clothing and wash skin with soap and water. Wash clothing before reuse.

Inhalation: Remove to fresh air and rest in half-upright position. If breathing is difficult administer oxygen. Never give anything by mouth to an unconscious person. Get medical attention if symptoms develop.

Ingestion: If patient is fully conscious, give two glasses of water or milk at once. Do not induce vomiting. Never give anything by mouth to an unconscious person. Obtain medical attention without delay.

Notes to Physician: There is no specific antidote. Treatment of overexposure should be directed at the control of symptoms and the clinical condition of the patient. Any material aspirated during vomiting may cause lung injury. Therefore, emesis should not be induced mechanically or pharmacologically. If it is considered necessary to evacuate the stomach contents, this should be done by means least likely to cause aspiration (e.g. gastric lavage after endotracheal intubation).

SECTION 5: FIRE FIGHTING MEASURES

Fire Hazards: Keep away from heat, sparks, open flame, or other ignition sources.

Flash Point:	N/A
Autoignition Temperature:	N/A
Flammable Limits in Air (% by volume) – LEL:	N/A
Flammable Limits in Air (% by volume) – UEL:	N/A

Extinguishing Media: Use dry chemical, alcohol-type or universal-type foams applied by manufacturer's recommended technique. Water may be ineffective.

Unsuitable Extinguishing Media for Safety Reasons: Do not use CO_2 or water stream, which may spread fire.

Special Fire Fighting Procedures: Do not spray a solid stream of water or foam directly into a pool of hot, burning paste as this may cause frothing and may intensify the fire. Use self-contained breathing apparatus when fighting fire in an enclosed area. Keep containers cool with a water spray, if possible.

Unusual Fire and Explosion Hazards: This product contains polydimethysiloxane which can generate formaldehyde as a byproduct of oxidative thermal decomposition at temperatures greater than 150°C (300°F). See Section 10 for further information.

SECTION 6: ACCIDENTAL RELEASE MEASURES

Material Release or Spill: Shut off ignition sources. Stop leak if you can do so without risk. Spills should be contained with mechanical barriers. Transfer spilled material to a suitable container for disposal. Dust particles should be sequestered with a tarp if outdoors to prevent wind dispersion of particles until clean-up can occur.

Environmental Protection: Do not discharge particles into drains/surface waters/groundwater.

Methods for Clean-up and Waste Disposal: Refer to Section 8, below, for exposure controls. Restrict area and ensure adequate ventilation. Dampen and gently sweep spilled material. Mechanically pick up dampened material and dispose of in accordance with all Federal, State, and local regulations.

SECTION 7: HANDLING AND STORAGE

Precautions for Handling and Storage:

Normal precautions common to safe manufacturing practice should be followed in handling and storage.

Keep container closed in a cool, dry, ventilated place.	S3/S7/S8/S9
Avoid contact with skin and eyes.	S24/S25
Avoid contacts with water or moisture before cured.	R101

Any proposed use of this product in elevated-temperature processes should be thoroughly evaluated to assure that safe operating conditions are established and maintained. Avoid formation and inhalation of dust particles. Do not eat, drink, or smoke when using this product. Wash thoroughly with soap and water after handling.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

Occupational Exposure Values and Source:

Silica, amorphous

10 mg/m^3 – 8 hours TWA (ACGIH), 6 mg/m^3 – 8 hours TWA (OSHA, NIOSH)

Tetra-n-propyl silicate: Observe values for n-propanol, formed on exposure to water or humid air

200 ppm – 8 hours TWA (skin)(ACGIH, OSHA, NIOSH)

250 ppm – STEL/CEIL (skin)(ACGIH, OSHA, NIOSH)

Carbon black

3.0 mg/m^3 – 8 hours TWA (inhalable)(ACGIH), 3.5 mg/m^3 – 8 hours TWA (OSHA)

Personal Protective Equipment (PPE):

Eyes and Face: Use tightly-fitting safety goggles.

Skin: Use PVC-coated or nitrile gloves on hands and wear additional impervious clothing as appropriate to protect skin.

Respiratory: In the event that overexposure cannot be avoided, a full-face respirator with cartridges approved by NIOSH when exposure levels are known to be within the unit's capability. Use a positive-pressure, air-supplied respirator if exposure levels are not known or where purifying respirators may not provide adequate protection for thermal decomposition products.

Engineering Controls: Provide local exhaust ventilation in processes to capture dust or thermal decomposition gases at their source.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Physical Appearance:	Paste
Color:	Black
Odor:	Silicone odor
Solubility:	Insoluble
Specific Gravity (H_2O=1):	~1.20
Boiling Point:	N/A
Freezing Point:	N/A
Vapor Pressure:	N/A
Vapor Density (air=1):	N/A
Evaporation Rate (butyl acetate=1):	N/A

NOTE: The above information is not intended for use in preparing product specifications.

SECTION 10: STABILITY AND REACTIVITY DATA

Stability: This product is stable under ordinary conditions of use and storage.

Conditions to Avoid: Avoid contact with elevated temperatures or open flame.

Incompatibility with Other Materials: Avoid contact or contamination with strong oxidizers, strong bases, caustics, mineral acids, amines, and acid anhydrides.

Hazardous Decomposition Products: Burning can produce carbon monoxide, carbon dioxide, oxides of silicon, and hydrocarbons. Carbon monoxide is high toxic if inhaled; carbon dioxide in sufficient concentrations can act as an asphyxiant. Acute overexposure to the products of combustion may result in irritation of the respiratory tract.

Traces of formaldehyde may be generated due to oxidative thermal decomposition at temperatures greater than 150°C (300°F). Exposure to formaldehyde can cause adverse effects such as skin and respiratory sensitization and eye and throat irritation. Formaldehyde is a potential carcinogen. Evaluate and control exposure to formaldehyde when warranted by conditions of use.

Hazardous Polymerization: Hazardous polymerization will not occur under normal processing.

SECTION 11: TOXOLOGICAL INFORMATION

Acute Toxicity: NIOSH – Selected LD_{50}'s and LC_{50}'s: Carbon black: LD_{50} >8000 mg/kg (oral, rat)
ACGIH – 2000 Skin Absorption Designation: No Data Available

Carcinogenic Status: IARC Carcinogens: Not listed
OSHA – Select Carcinogens: Not listed
NTP Eighth Report – Known Carcinogens: Not listed

NOTE: Refer to Section 3 for further discussion of the health hazards associated with this preparation.

SECTION 12: ECOLOGICAL INFORMATION

Ecolotoxological Information: Not determined

Chemical Fate Information: Not determined

SECTION 13: DISPOSAL CONSIDERATIONS

Waste Disposal: Dispose of absorbed material in accordance with all federal, state, and local regulations. Dispose of contaminated water in a contained waste treatment system.

SECTION 14: TRANSPORT INFORMATION

DOT Classification:
Proper Shipping Name: Consumer Commodity
Hazard Class: ORM-D
UN Number: N/A
Packing Group: N/A
Limited Quantity: No

Air Transportation:
Proper Shipping Name: Coating solution
Hazard Class: 3
UN Number: UN1139
Packing Group: II
Limited Quantity: Yes

SECTION 15: REGULATORY INFORMATION

Status on Substance Lists: The concentrations shown are maximum or ceiling levels (weight %) to be used for calculations for regulations.

C.H.I.P. Regulations: n-propanol, CAS #: 00071-23-8, Upper Bound Concentration: Trace Amount

Federal EPA: None

Inventory Status: The ingredients of this product are listed on, or are exempt from listing, on the TSCA inventory.

State-Right-to-Know: California Prop 65: This product contains chemical or chemicals known to the state of California to cause cancer: Carbon black.

Massachusetts 105 CMR 670,000 Right-To-Know, Substance List (MSL):
Silica (amorphous), CAS #: 07631-86-9, Upper Bound Concentration: 10%
n-propanol, CAS #: 00071-23-8, Upper Bound Concentration: Trace Amount

Pennsylvania Right-To-Know, Hazardous Substance List:
Silica (amorphous), CAS #: 07631-86-9, Upper Bound Concentration: 10%
n-propanol, CAS #: 00071-23-8, Upper Bound Concentration: Trace

California SCAQMN Rule 443.1 VOC's: Volatile Organic Compounds (VOC's) = Substances with vapor pressure of $\geq$ 0.5 mmHg at 104°C (219.2°F). This product contains <10 g/L VOC's.

Other Regulatory Info: EPA Hazard Categories: Immediate Health Hazard, Delayed Health Hazard.

SECTION 16: OTHER INFORMATION

Revision Information: No changes.

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MC10-0016-XX, Part B

SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: MC10-0016-XX, Part B

MANUFACTURER: MAST Technologies
ADDRESS: 6370 Nancy Ridge Dr., Suite 103
San Diego, CA 92121-3212

Emergency Phone: (858)452-1700 (regular 8-hour line)
San Diego, CA
Information Phone: (858)452-1700
San Diego, CA
Fax Line: (858)452-1702
San Diego, CA

Issue Date: 06/27/2011
Supersedes Date: N/A

Product Use: Part B for carbon loaded resistive MPS2 caulking kit.

SECTION 2: COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	CAS Number	Weight %
Dibutyltin dilaurate	00077-58-7	100

Notes: See additional exposure information in Section 8, below.

SECTION 3: HAZARDS IDENTIFICATION

HMIS Classification: Health: 2, Flammability: 1, Reactivity: 0, Protection: See PPE Section 8.

EMERGENCY OVERVIEW:

Specific Physical Form: Low viscosity liquid
Odor, Color, Grade: Characteristic odor with transparent yellow hue
General Physical Form: Liquid

POTENTIAL HEALTH EFFECTS:

Eye Contact: Causes irritation, experienced as a discomfort or pain, excess blinking and tear production, with marked excess redness and swelling of the conjunctive. Iritis may occur. Corneal injury may be severe, extensive, and, if not treated promptly, could result in permanent impairment of vision.

Skin Contact: Causes marked local irritation, seen as severe local redness and swelling. Skin corrosion may occur.

Skin Absorption: Prolonged or widespread skin contact may result in absorption of potentially harmful amounts of material.

Inhalation: Causes irritation of the respiratory tract, experienced as nasal discomfort and discharge with chest pain and coughing. There may be difficulty in breathing.

Ingestion: Moderately toxic. Causes irritation of the mouth and throat, with chest and abdominal discomfort, nausea, vomiting, diarrhea, faintness, dizziness, weakness, and possibly loss of consciousness. Aspiration into the lungs may occur during ingestion or vomiting, resulting in lung injury.

Chronic Overexposure: Repeated exposure to sufficiently high concentrations of dibutyltin dilaurate may cause liver damage, anemia, and possibly impairment of immunological mechanisms.

Medical Conditions Aggravated by Overexposure: Because of its irritating nature, this material may aggravate an existing dermatitis.

SECTION 4: FIRST AID MEASURES

Eye Contact: Immediately flush eyes with plenty of water. Remove contact lenses. Flush with water for at least 15 minutes while occasionally lifting lower and upper eyelids. If irritation persists seek medical attention.

Skin Contact: Remove contaminated clothing and wash skin with soap and water. Wash clothing before reuse.

Inhalation: Remove to fresh air and rest in half-upright position. If breathing is difficult administer oxygen. Never give anything by mouth to an unconscious person. Get medical attention if symptoms develop.

Ingestion: If patient is fully conscious, give two glasses of water or milk at once. Do not induce vomiting. Never give anything by mouth to an unconscious person. Obtain medical attention without delay.

Notes to Physician: There is no specific antidote. Treatment of overexposure should be directed at the control of symptoms and the clinical condition of the patient. Any material aspirated during vomiting may cause lung injury. Therefore, emesis should not be induced mechanically or pharmacologically. If it is considered necessary to evacuate the stomach contents, this should be done by means least likely to cause aspiration (e.g. gastric lavage after endotracheal intubation).

SECTION 5: FIRE FIGHTING MEASURES

Fire Hazards: Keep away from heat, sparks, open flame, or other ignition sources.

Flash Point:	235°C (Pensky-Marten)
Autoignition Temperature:	N/A
Flammable Limits in Air (% by volume) – LEL:	N/A
Flammable Limits in Air (% by volume) – UEL:	N/A

Extinguishing Media: Use water spray, carbon dioxide, dry chemical, alcohol-type or universal-type foams applied by manufacturer's recommended technique.

Special Fire Fighting Procedures: Do not spray a solid stream of water or foam directly into a pool of hot, burning liquid as this may cause frothing and may intensify the fire. Use self-contained breathing apparatus when fighting fire in an enclosed area.

Unusual Fire and Explosion Hazards: Irritating fumes may develop when heated.

SECTION 6: ACCIDENTAL RELEASE MEASURES

Material Release or Spill: May be injurious to aquatic life if discharged to open waters. Confine spill with absorbent, transfer to a suitable container for disposal.

Waste Disposal Method: Dispose of in accordance with all Federal, State, and local regulations.

SECTION 7: HANDLING AND STORAGE

Precautions for Handling and Storage:

Normal precautions common to safe manufacturing practice should be followed in handling and storage.

Keep container closed in a cool, dry place.	S3/S7/S8
Keep well ventilated, do not breathe fumes, and avoid skin contact.	S9/S23/S24
Harmful if swallowed, contacts skin, or is inhaled.	R20/R21/R22

Any proposed use of this product in elevated-temperature processes should be thoroughly evaluated to assure that safe operating conditions are established and maintained.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

Occupational Exposure Values and Source:

Dibutyltin dilaurate: 0.1 mg/m^3 – 8 hours TWA (skin)(as Sn)(ACGIH, OSHA)

Personal Protective Equipment (PPE):

Eyes and Face: Use tightly-fitting safety goggles.

Skin: Use PVC-coated gloves on hands and wear additional impervious clothing as appropriate to protect skin.

Respiratory: In the event that overexposure cannot be avoided, a full-face respirator with cartridges approved by NIOSH when exposure levels are known to be within the unit's capability. Use a positive-pressure, air-supplied respirator if exposure levels are not known or where purifying respirators may not provide adequate protection for thermal decomposition products.

Engineering Controls: Provide local exhaust ventilation in processes to capture dust or thermal decomposition gases at their source.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Physical Appearance:	Liquid
Color:	Translucent yellow
Odor:	Characteristic
Solubility:	Insoluble

Specific Gravity (H_2O=1):	1.05
Boiling Point:	>400°F
Freezing Point:	N/A
Vapor Pressure:	1.5mm @ 160°C
Vapor Density (air=1):	21.8
Evaporation Rate (butyl acetate=1):	<1

NOTE: The above information is not intended for use in preparing product specifications.

SECTION 10: STABILITY AND REACTIVITY DATA

Stability: This product is stable under ordinary conditions of use and storage.

Conditions to Avoid: Avoid contact with elevated temperatures or open flame.

Incompatibility with Other Materials: Avoid contact or contamination with strong oxidizers.

Hazardous Decomposition Products: Burning can produce butyltins and organotins.

Hazardous Polymerization: Hazardous polymerization will not occur under normal processing.

SECTION 11: TOXOLOGICAL INFORMATION

Acute Toxicity:	Oral LD_{50} (mg/kg):	50-500 (Rat) Inferred from ingredient hazard(s)
	Dermal LD_{50} (mg/kg):	200-1000 (Rabbit) Inferred from ingredient hazard(s)
	Inhalation LD_{50} (mg/kg):	0.5-2 (Rat) Inferred from ingredient hazard(s)

NOTE: Refer to Section 3 for further discussion of the health hazards associated with this preparation.

SECTION 12: ECOLOGICAL INFORMATION

Ecolotoxological Information: Not determined

Chemical Fate Information: Not determined

SECTION 13: DISPOSAL CONSIDERATIONS

Waste Disposal: Dispose of absorbed material in accordance with all federal, state, and local regulations. Dispose of contaminated water in a contained waste treatment system.

SECTION 14: TRANSPORT INFORMATION

DOT Classification: None

Air Transportation: None (Not regulated)

SECTION 15: REGULATORY INFORMATION

Status on Substance Lists: The concentrations shown are maximum or ceiling levels (weight %) to be used for calculations for regulations.

C.H.I.P. Regulations: None

Federal EPA: None

Inventory Status: The ingredients of this product are listed on, or are exempt from listing, on the TSCA inventory.

State-Right-to-Know: California Prop 65: This product contains no levels of listed substances, which the State of California has found to cause cancer, birth defects or other reproductive harm, which would require a warning under the statute.

Massachusetts 105 CMR 670,000 Right-To-Know, Substance List (MSL): None

Pennsylvania Right-To-Know, Hazardous Substance List: None

California SCAQMN Rule 443.1 VOC's: Volatile Organic Compounds (VOC's) = Substances with vapor pressure of $\geq$ 0.5 mmHg at 104°C (219.2°F). This product contains <1% by weight VOC's.

Other Regulatory Info: EPA Hazard Categories: Immediate Health Hazard, Delayed Health Hazard.

SECTION 16: OTHER INFORMATION

Revision Information: No changes.

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