1 PRODUCT AND COMPANY IDENTIFICATION

PRODUCT INFORMATION
Product Name: TB1217F-GM
Product Code: 1201-01-01
External Keys:
- Engine Sealant
- Primary Tradename - Distributable Material
- PMRV0383
- Distributable Material (Part #)
- 88861417
- Distributable Material (Part #)
- 12378521
- Distributable Material (Part #)
- 88864346
- Distributable Material (Part #)
- 10-2006

MANUFACTURER INFORMATION
Manufacturer: Three Bond International, Inc.
Address:
6184 SCHUMACHER PARK
USA OHIO 45069 WEST CHESTER MAILING DRIVE
Communication Lines:
Phone 800-424-9300 CHEMTREC
Phone 513-779-7300 EMERGENCY

Comment:
INFORMATION CONTACT: (513) 779-7300, Regulatory Department

Comment:
PRODUCT DESCRIPTION: One component silicone rubber compound

2 INGREDIENT INFORMATION

FORMULATION
Ingredients:

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>CAS Number</th>
<th>Prefix</th>
<th>Value</th>
<th>Unit</th>
<th>Exposure Limits</th>
</tr>
</thead>
<tbody>
<tr>
<td>SILIXANES AND SILICONES</td>
<td>989984-36-3</td>
<td>Range</td>
<td>40-60</td>
<td>%Wt</td>
<td>No</td>
</tr>
<tr>
<td>CARBONIC ACID, CALCIUM SALT (1:1)</td>
<td>471-34-1</td>
<td>Range</td>
<td>29 - 32</td>
<td>%Wt</td>
<td>Yes</td>
</tr>
<tr>
<td>SILICA, CRYSTALLINE - QUARTZ</td>
<td>14808-60-7</td>
<td>Range</td>
<td>14-17</td>
<td>%Wt</td>
<td>Yes</td>
</tr>
<tr>
<td>Silane, dichlorodimethyl-, reaction products with silica</td>
<td>68611-44-9</td>
<td>Range</td>
<td>4-7</td>
<td>%Wt</td>
<td>No</td>
</tr>
<tr>
<td>2-Butanone, O,O'O&quot;- (ethenylsilylidyne)trioxime</td>
<td>2224-33-1</td>
<td>Range</td>
<td>2-5</td>
<td>%Wt</td>
<td>No</td>
</tr>
<tr>
<td>TITANIUM OXIDE</td>
<td>13463-67-7</td>
<td>&lt;</td>
<td>1</td>
<td>%Wt</td>
<td>Yes</td>
</tr>
<tr>
<td>CARBON BLACK</td>
<td>1333-86-4</td>
<td>&lt;</td>
<td>0.1</td>
<td>%Wt</td>
<td>Yes</td>
</tr>
</tbody>
</table>

3 HAZARDS IDENTIFICATION

Hazards Overview:
EMERGENCY OVERVIEW
IMMEDIATE CONCERNS: Product generates MEKO upon contact with water or humid air. Irritating to eyes, respiratory system and skin. May cause sensitization. Possible cancer hazard.

Specific Hazards (Routes Of Exposure):

<table>
<thead>
<tr>
<th>Exposure Routes</th>
<th>Exposure Duration</th>
<th>Observation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Skin Contact</td>
<td>Acute</td>
<td>Repeated or prolonged contact may cause slight irritation leading to dermatitis. Product contains oximes which are possible skin sensitizers.</td>
</tr>
<tr>
<td>Eye Contact</td>
<td>Acute</td>
<td>Direct contact may cause slight irritation with</td>
</tr>
</tbody>
</table>
3  HAZARDS IDENTIFICATION

Specific Hazards (Routes Of Exposure):

<table>
<thead>
<tr>
<th>Exposure Routes</th>
<th>Observation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inhalation</td>
<td>redness and swelling. Overexposure to the vapor of the curing by-product, MEKO, can cause drowsiness, and may irritate nose and throat.</td>
</tr>
<tr>
<td>Ingestion</td>
<td>Not a likely route of entry. Swallowing small amounts should not cause injury. Swallowing large amounts may cause internal injury.</td>
</tr>
</tbody>
</table>

Effects Of Overexposure:

SIGN AND SYMPTOMS OF OVEREXPOSURE

ACUTE TOXICITY: Overexposure to MEKO, a curing by-product, can cause drowsiness, blood and liver injury, and may irritate the nose and throat.

Medical Conditions Aggravated By Exposure:

Not provided.

Additional Health Hazard Data:

SENSITIZATION: Product contains oximes which are possible skin sensitizers.

4  FIRST AID MEASURES

First Aid By:

Inhalation Remove to fresh air. If not breathing, give artificial respiration or give oxygen by trained personnel. If signs or symptoms persist, seek medical attention.

Skin Contact Remove product from skin. Immediately wash skin with soap and plenty of water. Remove contaminated clothing. Get medical attention if symptoms occur. Wash clothing before reuse.

Eye Contact Immediately flush eyes with plenty of water for at least 15 minutes. Get immediate medical attention.

Ingestion Rinse mouth well with water. Never give an unconscious person anything to ingest. Do not induce vomiting unless directed to do so by medical personnel. Seek immediate medical attention.

5  FIRE FIGHTING MEASURES

Extinguishing Media:

Use dry chemical powder, carbon dioxide, water fog, or foam.

Fire and Explosion Hazards:


Special Fire Fighting Procedures:

As in any fire, wear self-contained breathing apparatus pressure-demand, (MSHAINIOSH approved or equivalent) and full protective gear. Product generates MEKO upon contact with water or humid air.

6  ACCIDENTAL RELEASE MEASURES

PRECAUTIONS IN CASE OF ACCIDENTAL RELEASE

Personal Precautions:

LARGE SPILL: Wear proper protective equipment.

Environmental Precautions:

Keep spilled material from entering storm drains, sewers, or other environmental mediums.

SPILL OR LEAK PROCEDURES

Recovery:

SMALL SPILL: Use appropriate tools to put the spilled solid in a waste disposal container.

LARGE SPILL: Stop spill or leak at source. Use appropriate tools to put the spilled material in a waste container.

Disposal:

Disposal of clean-up materials may be governmentally regulated. Observe all applicable local, state, and federal waste management
6 ACCIDENTAL RELEASE MEASURES

SPILL OR LEAK PROCEDURES

Disposal:

regulations.

7 HANDLING AND STORAGE

HANDLING

Safe Handling Procedures:

Avoid contact with eyes and skin. This material is a potential skin sensitizer. Wear appropriate protective equipment. Use with adequate ventilation. Wash hands thoroughly with soap and water after handling.

STORAGE

Storage Conditions:

Keep container closed when not in use. Store in a dry, cool, well-ventilated area. Store away from heat, sources of ignition, water, or moisture.

8 EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering Measures:

Local exhaust ventilation may be necessary to control any air contaminants to within their TLVs during the use of this product. Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower.

EXPOSURE LIMITS

Limit Values:

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>CAS Number</th>
<th>Type</th>
<th>Value</th>
<th>Specification</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>CARBONIC ACID, CALCIUM SALT (1:1)</td>
<td>471-34-1</td>
<td>TLV-TWA</td>
<td>10mg/m3</td>
<td>-</td>
<td>Threshold Limit Values (TLVs) - ACGIH</td>
</tr>
<tr>
<td>CARBONIC ACID, CALCIUM SALT (1:1)</td>
<td>471-34-1</td>
<td>PEL-TWA</td>
<td>15mg/m3</td>
<td>-</td>
<td>OSHA - Permissible Exposure Limits (PELs)</td>
</tr>
<tr>
<td>SILICA, CRYSTALLINE - QUARTZ</td>
<td>14808-60-7</td>
<td>TLV-TWA</td>
<td>50ug/m3</td>
<td>-</td>
<td>Threshold Limit Values (TLVs) - ACGIH</td>
</tr>
<tr>
<td>SILICA, CRYSTALLINE - QUARTZ</td>
<td>14808-60-7</td>
<td>State-TWA</td>
<td>100ug/m3</td>
<td>-</td>
<td>MICHIGAN</td>
</tr>
<tr>
<td>SILICA, CRYSTALLINE - QUARTZ</td>
<td>14808-60-7</td>
<td>State-TWA</td>
<td>100ug/m3</td>
<td>-</td>
<td>NEW YORK</td>
</tr>
<tr>
<td>SILICA, CRYSTALLINE - QUARTZ</td>
<td>14808-60-7</td>
<td>State-TWA</td>
<td>100ug/m3</td>
<td>-</td>
<td>TENNESSEE</td>
</tr>
<tr>
<td>SILICA, CRYSTALLINE - QUARTZ</td>
<td>14808-60-7</td>
<td>GM OEG-TWA</td>
<td>100ug/m3</td>
<td>-</td>
<td>GM Occupational Exposure Guidelines (OEG)</td>
</tr>
<tr>
<td>TITANIUM OXIDE</td>
<td>13463-67-7</td>
<td>PEL-TWA</td>
<td>15mg/m3</td>
<td>-</td>
<td>OSHA - Permissible Exposure Limits (PELs)</td>
</tr>
<tr>
<td>TITANIUM OXIDE</td>
<td>13463-67-7</td>
<td>GM OEG-TWA</td>
<td>10mg/m3</td>
<td>-</td>
<td>GM Occupational Exposure Guidelines (OEG)</td>
</tr>
<tr>
<td>TITANIUM OXIDE</td>
<td>13463-67-7</td>
<td>TLV-TWA</td>
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<td>-</td>
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</tr>
</tbody>
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EXPOSURE LIMITS

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<th>Type</th>
<th>Value</th>
<th>Specification</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>TITANIUM OXIDE</td>
<td>13463-67-7</td>
<td>State-TWA</td>
<td>10mg/m³</td>
<td>-</td>
<td>MICHIGAN</td>
</tr>
<tr>
<td>TITANIUM OXIDE</td>
<td>13463-67-7</td>
<td>State-TWA</td>
<td>5mg/m³</td>
<td>-</td>
<td>NEW YORK</td>
</tr>
<tr>
<td>TITANIUM OXIDE</td>
<td>13463-67-7</td>
<td>State-TWA</td>
<td>10mg/m³</td>
<td>-</td>
<td>TENNESSEE</td>
</tr>
<tr>
<td>CARBON BLACK</td>
<td>1333-86-4</td>
<td>GM OEG-TWA</td>
<td>3.5mg/m³</td>
<td>-</td>
<td>OSHA - Permissible Exposure Limits (PELs)</td>
</tr>
<tr>
<td>CARBON BLACK</td>
<td>1333-86-4</td>
<td>GM OEG-TWA</td>
<td>3.5mg/m³</td>
<td>-</td>
<td>GM Occupational Exposure Guidelines (OEG)</td>
</tr>
<tr>
<td>CARBON BLACK</td>
<td>1333-86-4</td>
<td>TLV-TWA</td>
<td>3.5mg/m³</td>
<td>-</td>
<td>Threshold Limit Values (TLVs) - ACGIH</td>
</tr>
<tr>
<td>CARBON BLACK</td>
<td>1333-86-4</td>
<td>State-TWA</td>
<td>3.5mg/m³</td>
<td>-</td>
<td>MICHIGAN</td>
</tr>
<tr>
<td>CARBON BLACK</td>
<td>1333-86-4</td>
<td>State-TWA</td>
<td>3.5mg/m³</td>
<td>-</td>
<td>NEW YORK</td>
</tr>
<tr>
<td>CARBON BLACK</td>
<td>1333-86-4</td>
<td>State-TWA</td>
<td>3.5mg/m³</td>
<td>-</td>
<td>TENNESSEE</td>
</tr>
</tbody>
</table>

Comment:
Product generates methyl ethyl ketoxime (MEKO) upon contact with water or humid air. MEKO exposure limits: TWA, 3 ppm from Vendor Guide (United States)
ATEA TWA, 10 ppm, STEL, 10 ppm (Workplace Environmental Exposure Level, United States)

PERSONAL PROTECTIVE EQUIPMENT

Personal Protective Equipment (PPE):
- Eye Protection: Safety glasses.
- Skin Protection: Chemically impervious clothing should be worn if potential for skin contact.
- Respiratory: In case of insufficient ventilation, wear suitable respiratory protection equipment.
- Hand Protection: Gloves (chemically impervious).

Hygiene Measures:
Wash hands before eating, smoking, or using restroom. Food or beverages should not be consumed anywhere this product is handled or stored. Wash thoroughly after handling.

9 PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE
Physical State: Paste.
Color: Grey.
Odor: Oxime odor.

PHYSICAL PROPERTIES
Vapor Pressure:
Negligible
Vapor Density:
9 PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL PROPERTIES

Vapor Density:
> 1

Evaporation Rate:
< 1

Density:
Density = 12.34 lb/gal

Specific Gravity:
= 1.48

VOC:
Analytical VOC (by wt.) = 0.42 lb/gl

EPA Method 24, Weight Loss Determination.

10 STABILITY AND REACTIVITY

STABILITY INFORMATION

Stability Under Normal Conditions: Stable

Conditions to Avoid:
Contact with water, moisture, or humid air causes curing and MEKO vapors form gradually.

Hazardous Polymerization:
Will not occur.

HAZARDOUS DECOMPOSITION

Reactions:

Type of Reaction                   Reaction Products
Reaction with Water               Product generates MEKO upon contact with water or humid air.

11 TOXICOLOGICAL INFORMATION

SCIENTIFIC OBSERVATIONS

TOXICOLOGICAL EFFECTS

Data By Chemical:

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>CAS Number</th>
<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>CARBON BLACK</td>
<td>1333-86-4</td>
<td></td>
</tr>
</tbody>
</table>

TARGET ORGANS: Carbon black-Target organs: Lungs. Effects include inflammation, fibrosis, tumors. Chronic toxicity found in rats. Tumors in the rat lung are related to the fine particle overload phenomenon rather than to a specific chemical effect of the dust particles in the lung. These effects in rats have been reported in studies on other inorganic insoluble particles and appear to be species specific. Tumors have not been observed in other species for carbon black under similar circumstances and study conditions. Exposure to airborne
11 TOXICOLOGICAL INFORMATION

SCIENTIFIC OBSERVATIONS

TOXICOLOGICAL EFFECTS

Data By Chemical:

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>CAS Number</th>
<th>Exposure Routes</th>
<th>Type</th>
<th>Prefix</th>
<th>Value</th>
<th>Unit</th>
<th>Species</th>
</tr>
</thead>
<tbody>
<tr>
<td>CARBONIC ACID, CALCULUM SALT (1:1)</td>
<td>471-34-1</td>
<td>Ingestion</td>
<td>LD50</td>
<td>=</td>
<td>6450</td>
<td>mg/kg</td>
<td>Rat</td>
</tr>
<tr>
<td>CARBONIC ACID, CALCULUM SALT (1:1)</td>
<td>471-34-1</td>
<td>Skin Contact</td>
<td>LD50</td>
<td>=</td>
<td>500</td>
<td>mg</td>
<td>Rabbit</td>
</tr>
<tr>
<td>TITANIUM OXIDE</td>
<td>13463-67-7</td>
<td>Ingestion</td>
<td>LD50</td>
<td>=</td>
<td>6450</td>
<td>mg/kg</td>
<td>Rat</td>
</tr>
<tr>
<td>CARBON BLACK</td>
<td>1333-86-4</td>
<td>Ingestion</td>
<td>LD50</td>
<td>&gt;</td>
<td>8000</td>
<td>mg/kg</td>
<td>Rat</td>
</tr>
</tbody>
</table>

CLASSIFICATION OF INGREDIENTS

Carcinogenicity:

EMERGENCY OVERVIEW
IMMEDIATE CONCERNS: Possible cancer hazard.
This product contains materials which are shown to be carcinogenic.
CHRONIC: MEKO- Liver carcinomas were observed in a lifetime inhalation study (ca. 2 years) in which mice and rats were exposed. These carcinomas were statistically increased in males at a MEKO concentration of 375 ppm. Relevance to humans in uncertain. Degenerative effects on the olfactory epithelium of nasal passages occurred in male and female mice and rats at MEKO concentrations of 15, 75, and 375 ppm.
SUBCHRONIC: Quartz- Prolonged inhalation of quartz may result in silicosis, a disabling pulmonary fibrosis characterized by fibrotic changes and miliary nodules in the lungs, a dry cough, shortness of breath, emphysema, decreased chest expansion, and increased susceptibility to tuberculosis. In advanced stages, loss of appetite, pleuritic pain, and total incapacity to work. Advanced silicosis may result in death due to cardiac failure or destruction of lung tissue. Through use of this product, exposure to inhalable, airborne dust is unlikely because these particles as solid fillers are suspended, or wetted out, in the uncured product. Once the product is fully cured, solid particle fillers are contained within the polymer matrix and their dust will not be generated under normal conditions of use of this product. Therefore, the potential carcinogenic risks to humans using this product is considered to be small.
Quartz (14808-60-7): NTP Status: K. IARC Status: 1 ACGIH: A2
Titanium Dioxide (13463-67-7): IARC Status: 3. ACGIH: A4
Carbon Black (1333-86-4): IARC Status: 2B. ACGIH: A4
CALIFORNIA. PROPOSITION 65: Carbon Black (1333-86-4): < 0.1% Wt. Listed: Cancer

Mutagenicity:
MEKO- Mutagenic and tumorigenic effects have been observed in tests with laboratory animals. Relevance to humans is unknown.
Rat, inhalation, TC50: >4.8 mg/L (MEKO) Rat, oral, LD50: 4 ML/kg (MEKO)

12 ECOLOGICAL INFORMATION

ENVIRONMENTAL IMPACT

Comment:
Not Available

ECOTOXICITY

Comment:
Not Available

13 DISPOSAL CONSIDERATIONS

Waste Disposal Information:
13 DISPOSAL CONSIDERATIONS
Waste Disposal Information:
Waste must be disposed of in accordance with federal, state, and local environmental control regulations. Consult your licensed waste contractor for detailed recommendations.

14 TRANSPORT INFORMATION
DOT Information:
Not a DOT controlled material (United States).

Comment:
AIR (ICAO/IATA)
NOTE: Not an IATA controlled material.
VESSEL (IMO/INIDG)
NOTE: Not an IMDG controlled material.

15 REGULATORY INFORMATION

LABELLING
Hazard Codes:
HMIS Reactivity 1
HMIS Health 1
HMIS Flammability 1
NFPA Flammability 1
NFPA Health 2
NFPA Reactivity 1

NATIONAL REGULATIONS
SARA 311/312: Yes
SARA 313: No
Immediate Health: Yes
Delayed Health: Yes
Fire: No
Sudden Pressure Release: No
Reactive: Yes
Other Regulation:

313 REPORTABLE INGREDIENTS: No products were found above de minimis levels.
TSCA STATUS: All ingredients in this mixture are in compliance with TSCA.

STATE/LOCAL REGULATIONS
Comment:
STATES WITH SPECIAL REQUIREMENTS
Quartz (14808-60-7): This product contains a component or components listed on the Massachusetts Right to Know list of hazardous substances. This product contains a component or components listed on the Pennsylvania Right to Know list of hazardous substances.
Titanium Dioxide (13463-67-7): This product contains a component or components listed on the Massachusetts Right to Know list of hazardous substances. This product contains a component or components listed on the Pennsylvania Right to Know list of hazardous substances.
Carbon Black (1333-86-4): This product contains a component or components listed on the Massachusetts Right to Know list of hazardous substances. This product contains a component or components listed on the Pennsylvania Right to Know list of hazardous substances.
CALIFORNIA. PROPOSITION 65: Carbon Black (1333-86-4): < 0.1% Wt. Listed: Cancer

16 OTHER INFORMATION
Comments:
Additional Exposure Limits: GM Occupational Exposure Guidelines (OEG) and State TWA’s were provided by General Motors.