MATERIAL SAFETY DATA SHEET

1. Product and Company Identification

Product Name: BAYBLOCK PRIME NS BLACK
Material Number: 81253103
Chemical Family: Water-based Acrylic Coating

2. Hazards Identification

Emergency Overview

May cause eye, skin, and respiratory tract irritation. Use cold water spray to cool fire-exposed containers to minimize the risk of rupture. Toxic gases/fumes may be given off during burning or thermal decomposition. May be harmful if inhaled. May cause lung damage. Contains material which can cause cancer.

Potential Health Effects

Primary Routes of Entry: Skin Contact, Eye Contact, Inhalation
Medical Conditions Aggravated by Exposure: Skin disorders, Respiratory disorders, Eye disorders

HUMAN EFFECTS AND SYMPTOMS OF OVEREXPOSURE

Inhalation
Acute Inhalation
For Component: Limestone
Causes respiratory tract irritation with symptoms of coughing, sore throat and runny nose. May cause mechanical irritation.

For Component: Titanium dioxide (rutile)
May cause mechanical irritation.

For Component: Titanium dioxide (Rutile)
May cause mechanical irritation.
For Component: **Carbon Black**
May cause respiratory tract irritation with symptoms of coughing, sore throat and runny nose.

For Component: **Crystalline Quartz Silica**
May be harmful by inhalation. May cause mechanical irritation.

**Chronic Inhalation**
For Component: **Carbon Black**
Epidemiological studies of workers in the carbon black producing industry have shown no significant health effects due to occupational exposure to carbon black. In addition, studies in rats have shown effects due only to the prolonged exposure from the accumulation of nontoxic dust in the pulmonary system including chronic inflammation, lung fibrosis, and lung tumors.

**Skin**
For Component: **Limestone**
Causes irritation with symptoms of reddening, itching, and swelling. May cause mechanical irritation.

For Component: **Titanium dioxide (rutile)**
May cause mechanical irritation.

For Component: **Titanium dioxide (Rutile)**
Not expected to be irritating.

For Component: **Carbon Black**
May cause mechanical irritation.

For Component: **Benzophenone**
Slightly toxic by skin absorption. May cause slight irritation. Not expected to be a skin sensitizer.

For Component: **Crystalline Quartz Silica**
May cause mechanical irritation.

**Eye**
For Component: **Limestone**
Causes irritation with symptoms of reddening, tearing, stinging, and swelling. May cause mechanical irritation.

For Component: **Titanium dioxide (rutile)**
May cause mechanical irritation.

For Component: **Titanium dioxide (Rutile)**
Not expected to be irritating.

For Component: **Carbon Black**
May cause mechanical irritation.

For Component: **Crystalline Quartz Silica**
May cause mechanical irritation.

**Ingestion**
For Component: **Limestone**
Slightly toxic by ingestion.
For Component: **Titanium dioxide (rutile)**
Symptoms of ingestion may include abdominal pain, nausea, vomiting, and diarrhea. Not expected to be harmful if swallowed.

For Component: **Titanium dioxide (Rutile)**
Not expected to be harmful if swallowed.

For Component: **Benzophenone**
Not expected to be harmful if swallowed.

For Component: **Crystalline Quartz Silica**
Not expected to be harmful if swallowed.

**General Effects of Exposure**

**Acute Effects of Exposure**

**For Component: Crystalline Quartz Silica**
Exposure to Silica, Quartz can cause a very serious lung disease called Silicosis with cough, shortness of breath, and changes in chest x-ray. The earliest symptoms of silicosis may include: Shortness of breath, coughing, wheezing, fatigue, chest pain, loss of appetite and fever.

**Chronic Effects of Exposure**

**For Component: Crystalline Quartz Silica**
Excessive exposure to airborne crystalline silica can cause fibrotic lung damage, with scarring of the lungs with cough and shortness of breath. This is called "Silicosis". This is generally a slowly developing fibrotic disease as symptoms are usually delayed for 10 years or more. Symptoms are dyspnea, chest pain, breathlessness, and cough. The chronic lung scarring developed from the silica dust causes a progressive massive fibrosis. This may lead to increased susceptibility to tuberculosis.

**Carcinogenicity:**

- **Titanium dioxide (rutile)**
  - IARC - Overall evaluation: 2B Possibly carcinogenic to humans.

- **Titanium dioxide (Rutile)**
  - IARC - Overall evaluation: 2B Possibly carcinogenic to humans.

- **Carbon Black**
  - IARC - Overall evaluation: 2B Possibly carcinogenic to humans.

- **Benzophenone**
  - IARC - Overall evaluation: 2B Possibly carcinogenic to humans.

- **Crystalline Quartz Silica**
  - NTP - Hazard Designation: Known To Be Human Carcinogen.
  - IARC - Overall evaluation: 1 Carcinogenic to humans.

### 3. Composition/Information on Ingredients

<table>
<thead>
<tr>
<th>Hazardous components</th>
<th>Weight percent</th>
<th>Components</th>
<th>CAS-No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>25 - 35%</td>
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<td>Limestone</td>
<td>1317-65-3</td>
</tr>
<tr>
<td>0.1 - 1%</td>
<td>0.1 - 1%</td>
<td>Titanium dioxide (rutile)</td>
<td>1317-80-2</td>
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<td>0.1 - 1%</td>
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<td>Benzophenone</td>
<td>119-61-9</td>
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<td>0.1 - 1%</td>
<td>0.1 - 1%</td>
<td>Crystalline Quartz Silica</td>
<td>14808-60-7</td>
</tr>
</tbody>
</table>
4. First aid measures

Eye contact
In case of contact, flush eyes with plenty of lukewarm water. Get medical attention if irritation develops.

Skin contact
In case of skin contact, wash affected areas with soap and water. Immediately remove contaminated clothing and shoes. Get medical attention if irritation develops and persists.

Inhalation
If inhaled, remove to fresh air. Get medical attention if irritation develops.

Ingestion
If ingested, do not induce vomiting unless directed to do so by medical personnel. Get medical attention.

5. Firefighting measures

Suitable extinguishing media:
All extinguishing media are suitable.

Special Fire Fighting Procedures
Firefighters should be equipped with self-contained breathing apparatus to protect against potentially toxic and irritating fumes. Use cold water spray to cool fire-exposed containers to minimize the risk of rupture.

Unusual Fire/Explosion Hazards
Toxic and irritating gases/fumes may be given off during burning or thermal decomposition.

6. Accidental release measures

Spill and Leak Procedures
Cleanup personnel must use appropriate personal protective equipment. Cover spill with inert material (e.g., dry sand or earth) and collect for proper disposal.

7. Handling and storage

Storage temperature:
- minimum: 1 °C (33.8 °F)
- maximum: 49 °C (120.2 °F)

Storage period
12 Months

Handling/Storage Precautions
Avoid breathing dust, vapor, or mist. Avoid contact with skin or clothing. Avoid contact with eyes. Use only with adequate ventilation/personal protection. Wash thoroughly after handling. Keep container closed when not in use. Protect from freezing.

Further Info on Storage Conditions
None known.
8. Exposure controls/personal protection

Limestone (1317-65-3)
US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)
PEL: 5 mg/m3 (Respirable fraction.)
US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)
PEL: 15 mg/m3 (Total dust.)

Carbon Black (1333-86-4)
US. ACGIH Threshold Limit Values
Time Weighted Average (TWA): 3.5 mg/m3
US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)
PEL: 3.5 mg/m3
US. ACGIH Threshold Limit Values
Time Weighted Average (TWA): 3 mg/m3 (Inhalable fraction.)
US. ACGIH Threshold Limit Values
Hazard Designation: Group A4 Not classifiable as a human carcinogen.
US. ACGIH Threshold Limit Values
Hazard Designation: Group A3 Confirmed animal carcinogen with unknown relevance to humans.

Crystalline Quartz Silica (14808-60-7)
US. ACGIH Threshold Limit Values
Time Weighted Average (TWA): 0.025 mg/m3 (Respirable fraction.)
US. ACGIH Threshold Limit Values
Hazard Designation: Group A2 Suspected human carcinogen.

Industrial Hygiene/Ventilation Measures
When handling this product, ventilation of the work area is recommended.

Respiratory protection
In case of mist, spray or aerosol exposure wear suitable personal respiratory protection and protective suit.

Hand protection
Permeation resistant gloves., Neoprene gloves

Eye protection
Chemical safety goggles or safety glasses with side-shields.

Skin and body protection
Wear as appropriate;, disposable one-piece overall with integral hood, Impervious protective clothing.

Additional Protective Measures
Employees should wash their hands and face before eating, drinking, or using tobacco products. Educate and train employees in the safe use and handling of this product. Emergency showers and eye wash stations should be available.

9. Physical and chemical properties

Form: liquid
Color: Black
Odor: Mild, Amine
Freezing Point: Approximately 0 °C (32 °F) similar to water
Boiling point/boiling range: Approximately 100 °C (212 °F) similar to water
Flash point: Not applicable (water based product), however, solid material will support combustion if water has been evaporated.
Vapour pressure: 17 mmHg @ 20 °C (68 °F) similar to water
Specific Gravity: 1.5
Bulk density: Approximately 1,500 kg/m³

10. Stability and reactivity

Hazardous Reactions
Hazardous polymerisation does not occur.

Stability
 Stable

Materials to avoid
None known.

Hazardous decomposition products
By Thermal Decomposition: carbon monoxide, carbon dioxide, Acrylic monomers, other potentially toxic fumes

11. Toxicological information

Toxicity Data for Limestone
Acute oral toxicity
LD50: 6,450 mg/kg (Rat)

Skin irritation
rabbit, Draize, Exposure Time: 24 h, Moderately irritating

Eye irritation
rabbit, Draize, Exposure Time: 24 h, Severely irritating

Toxicity Data for Titanium dioxide (rutile)
Acute oral toxicity
LD50: > 24,000 mg/kg (Rat)

Acute inhalation toxicity
LC50: 6820 mg/m³, 4 h (Rat)

Mutagenicity
Genetic Toxicity in Vitro:
Other assay: negative, Negative results were reported in various in vitro studies. (Bacillus subtilis)

Carcinogenicity
Rat, Male/Female, inhalation,
According to IARC, several rat inhalation and intratracheal installation studies using titanium dioxide have shown increases in benign and malignant lung tumors. Reviewed human exposure data did not suggest an association between occupational exposure to titanium dioxide and risk for cancer. Additionally, the IARC working group determined that, “No significant exposure to titanium dioxide is thought to occur during the use of products in which titanium dioxide is bound to other material, such as in paints.”, Animal experiments showed a statistically significant number of tumours.
Rat, Male/Female, oral, 103 weeks, daily,
No carcinogenic effects observed at the doses tested.
mouse, Male/Female, oral, 103 days, daily,
No carcinogenic effects observed at the doses tested.

Toxicity to Reproduction/Fertility
Three generation study, oral, (Rat) NOAEL (parental): 5 mg/L (as Titanium),
Reproductive effects have been observed in animal studies.

Toxicity Data for Titanium dioxide (Rutile)
Acute oral toxicity
LD50: > 5,000 mg/kg (Rat)

Acute inhalation toxicity
LC0: > 6.82 mg/l, 4 h (Rat)

Acute dermal toxicity
LD50: > 5,000 mg/kg (rabbit)

Skin irritation
rabbit, Exposure Time: 24 h, Non-irritating

Eye irritation
rabbit, Draize, Non-irritating

Sensitisation
dermal: non-sensitizer (Guinea pig, Maximization Test)
dermal: non-sensitizer (Human, Patch Test)

Repeated dose toxicity
28 Days, inhalation: NOAEL: 35 mg/m3, (Rat)

Mutagenicity
Genetic Toxicity in Vitro:
Ames: negative (Salmonella typhimurium, Metabolic Activation: with/without)
Genetic Toxicity in Vivo:
Drosophila SLRL test: negative (Drosophila melanogaster)
negative

Carcinogenicity
Rat, Male/Female, inhalation,
According to IARC, several rat inhalation and intratracheal installation studies using titanium dioxide have shown increases in benign and malignant lung tumors. Reviewed human exposure data did not suggest an association between occupational exposure to titanium dioxide and risk for cancer. Additionally, the IARC working group determined that, "No significant exposure to titanium dioxide is thought to occur during the use of products in which titanium dioxide is bound to other material, such as in paints."

Toxicity Data for Carbon Black
Acute oral toxicity
LD50: > 5,000 mg/kg (Rat)
LD50: > 2,000 mg/kg (Rat)

Acute dermal toxicity
LD50: > 3,000 mg/kg (rabbit)
Skin irritation
rabbit, non-irritant

Eye irritation
rabbit, non-irritant

Mutagenicity
Genetic Toxicity in Vitro:
Salmonella/microsome test (Ames test): negative

Carcinogenicity

Several inhalation studies involving carbon black in female rats have shown increases in benign and malignant lung tumors. Although a large body of data on possible mechanisms of carcinogenicity in rats was considered by the IARC Working Group, it was not possible to state with confidence that the mechanisms of carcinogenicity in rats correlate to exposure in humans. Tumors have not been observed in other animal species (i.e., mouse and hamster) under similar circumstances and study conditions.

Toxicity Data for Benzophenone

Acute oral toxicity
LD50: > 5,000 mg/kg (rat)

Acute dermal toxicity
LD50: 3,535 mg/kg (rabbit)

Skin irritation
rabbit, Slightly irritating

Sensitisation
non-sensitizer (Guinea pig)

Repeated dose toxicity
90 d, oral: NOAEL: 20 mg/kg, LOAEL: 100 mg/kg, (rat, Male/Female, daily)

Mutagenicity
Genetic Toxicity in Vitro:
Ames: negative (Salmonella typhimurium, Metabolic Activation: with/without)

Carcinogenicity
mouse, female, dermal, life span,
No carcinogenic effects observed at the doses tested.

Toxicity Data for Crystalline Quartz Silica

Mutagenicity
Genetic Toxicity in Vitro:
Ames: Negative results were reported in various in vitro studies. (Salmonella typhimurium, Metabolic Activation: with/without)

Carcinogenicity
rat, Male/Female, inhalation, 2 years, 6 hrs/day 5 days/week,
positive
12. Ecological information

**Ecological Data for Limestone**

**Biodegradation**
Not readily biodegradable.

**Acute and Prolonged Toxicity to Fish**
LC50: 56,000 mg/l (Mosquitofish (Gambusia affinis), 48 h)

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**Ecological Data for Titanium dioxide (rutile)**

**Additional Ecotoxicological Remarks**
No data available for this component.

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**Ecological Data for Titanium dioxide (Rutile)**

**Acute and Prolonged Toxicity to Fish**
LC0: > 1,000 mg/l (Golden orfe (Leuciscus idus), 48 h)

**Acute Toxicity to Aquatic Invertebrates**
EC0: > 3 mg/l (Water flea (Daphnia magna))

**Toxicity to Microorganisms**
EC0: > 10,000 mg/l, (Pseudomonas fluorescens, 24 h)

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**Ecological Data for Carbon Black**

**Acute and Prolonged Toxicity to Fish**
LC0: > 1,000 mg/l (Danio rerio (zebra fish), 96 h)

**Acute Toxicity to Aquatic Invertebrates**
EC50: > 5,600 mg/l (Water flea (Daphnia magna), 24 h)

**Toxicity to Microorganisms**
EC0: 100 - 800 mg/l, (Activated sludge microorganisms, 3 h)

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**Ecological Data for Benzophenone**

**Biodegradation**
aerobic, 0 %, 0 %, Exposure time: 28 d, i.e. not readily degradable

**Bioaccumulation**
Does not bioaccumulate.

**Acute and Prolonged Toxicity to Fish**
LC50: 15.3 mg/l (Fathead minnow (Pimephales promelas), 96 h)

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13. Disposal considerations

**Waste Disposal Method**
Waste disposal should be in accordance with existing federal, state and local environmental control laws.

**Empty Container Precautions**
Recondition or dispose of empty container in accordance with governmental regulations. Do not reuse empty container without proper cleaning.
14. Transport information

Land transport (DOT)
Non-Regulated

Sea transport (IMDG)
Non-Regulated

Air transport (ICAO/IATA)
Non-Regulated

15. Regulatory information

United States Federal Regulations

OSHA Hazcom Standard Rating: Hazardous

US. Toxic Substances Control Act: Listed on the TSCA Inventory.

US. EPA CERCLA Hazardous Substances (40 CFR 302):

<table>
<thead>
<tr>
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<td>None</td>
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SARA Section 311/312 Hazard Categories:
Acute Health Hazard, Chronic Health Hazard

US. EPA Emergency Planning and Community Right-To-Know Act (EPCRA) SARA Title III Section 302 Extremely Hazardous Substance (40 CFR 355, Appendix A):

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US. EPA Emergency Planning and Community Right-To-Know Act (EPCRA) SARA Title III Section 313 Toxic Chemicals (40 CFR 372.65) - Supplier Notification Required:

<table>
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<td>None</td>
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Under RCRA, it is the responsibility of the person who generates a solid waste, as defined in 40 CFR 261.2, to determine if that waste is a hazardous waste.

State Right-To-Know Information

The following chemicals are specifically listed by individual states; other product specific health and safety data in other sections of the MSDS may also be applicable for state requirements. For details on your regulatory requirements you should contact the appropriate agency in your state.

Massachusetts, New Jersey or Pennsylvania Right to Know Substance Lists:

<table>
<thead>
<tr>
<th>Weight percent</th>
<th>Components</th>
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</tr>
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<tbody>
<tr>
<td>&gt;=1%</td>
<td>Water</td>
<td>7732-18-5</td>
</tr>
<tr>
<td>&gt;=1%</td>
<td>Acrylic Polymer</td>
<td></td>
</tr>
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Material Name: BAYBLOCK PRIME NS BLACK  Article Number: 81253103
### New Jersey Environmental Hazardous Substances List and/or New Jersey RTK Special Hazardous Substances Lists:

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### MA Right to Know Extraordinarily Hazardous Substance List:

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### California Prop. 65:

Warning! This product contains chemical(s) known to the State of California to be Carcinogenic.

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<td><strong>0.1 - 1%</strong></td>
<td>Benzophenone</td>
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### 16. Other information

#### NFPA 704M Rating

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<tbody>
<tr>
<td>Flammability</td>
<td>1</td>
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<tr>
<td>Reactivity</td>
<td>0</td>
</tr>
<tr>
<td>Other</td>
<td>0=Insignificant 1=Slight 2=Moderate 3=High 4=Extreme</td>
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#### HMIS Rating

<table>
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<tbody>
<tr>
<td>Flammability</td>
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<tr>
<td>Physical Hazard</td>
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</tr>
<tr>
<td>0=Minimal 1=Slight 2=Moderate 3=Serious 4=Severe</td>
<td></td>
</tr>
<tr>
<td>* = Chronic Health Hazard</td>
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</tbody>
</table>

The method of hazard communication for Bayer MaterialScience LLC is comprised of Product Labels and Material Safety Data Sheets. HMIS and NFPA ratings are provided by Bayer MaterialScience LLC as a customer service.

Contact person: Product Safety Department
Telephone: (412) 777-2835
MSDS Number: 112000031346
Version Date: 11/22/2013
Report version: 4.0
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Changes since the last version are highlighted in the margin. This version replaces all previous versions.