Material Safety Data Sheet

Revision Date: 23-Sep-2013
Revision Number: 3

1. PRODUCT AND COMPANY IDENTIFICATION

Product Name: IMPERVO ALKYD ENAMEL HIGH GLOSS
Product Code: K1332B
Product Class: SOLVENT THINNED PAINT
Color: All

Manufacturer: Benjamin Moore & Co.
101 Paragon Drive
Montvale, NJ 07645
Phone: 855-724-6802
www.benjaminmoore.com

2. COMPOSITION INFORMATION ON COMPONENTS

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>CAS-No</th>
<th>Weight % (max)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Soybean oil, polymer with pentaerythritol and phthalic anhydride</td>
<td>66070-60-8</td>
<td>30 - 60%</td>
</tr>
<tr>
<td>Hydrotreated heavy naphtha, petroleum</td>
<td>64742-48-9</td>
<td>15 - 40%</td>
</tr>
<tr>
<td>Titanium dioxide</td>
<td>13463-67-7</td>
<td>10 - 30%</td>
</tr>
<tr>
<td>Solvent naphtha, petroleum, medium aliphatic</td>
<td>64742-88-7</td>
<td>7 - 13%</td>
</tr>
<tr>
<td>Kaolin</td>
<td>1332-58-7</td>
<td>3 - 7%</td>
</tr>
<tr>
<td>Soybean Oil</td>
<td>8001-22-7</td>
<td>3 - 7%</td>
</tr>
<tr>
<td>Xylene</td>
<td>1330-20-7</td>
<td>1 - 5%</td>
</tr>
<tr>
<td>Cobalt bis(2-ethylhexanoate)</td>
<td>136-52-7</td>
<td>0.25 - 0.5%</td>
</tr>
<tr>
<td>Ethyl benzene</td>
<td>100-41-4</td>
<td>0.25 - 0.5%</td>
</tr>
<tr>
<td>Methyl ethyl ketoxime</td>
<td>96-29-7</td>
<td>0.1 - 0.25%</td>
</tr>
</tbody>
</table>

3. HAZARDS IDENTIFICATION
3. HAZARDS IDENTIFICATION

Potential Health Effects

Principal Routes of Exposure
Eye contact, skin contact and inhalation.

Acute Effects

Eye
Contact with eyes may cause irritation.

Skin
May cause skin irritation and/or dermatitis. May cause allergic skin reaction.

Inhalation
High vapor / aerosol concentrations are irritating to the eyes, nose, throat and lungs and may cause headaches, dizziness, drowsiness, unconsciousness, and other central nervous system effects.

Ingestion
Ingestion may cause irritation to mucous membranes. Small amounts of this product aspirated into the respiratory system during ingestion or vomiting may cause mild to severe pulmonary injury, possibly progressing to death.

Chronic Effects
Avoid repeated exposure

See Section 11 for additional Toxicological information.

Aggravated Medical Conditions
None known

| HMIS | Health: 1* | Flammability: 2 | Reactivity: 0 | PPE: - |

HMIS Legend
0 - Minimal Hazard
1 - Slight Hazard
2 - Moderate Hazard
3 - Serious Hazard
4 - Severe Hazard
* - Chronic Hazard
X - Consult your supervisor or S.O.P. for "Special" handling instructions.

Note: The PPE rating has intentionally been left blank. Choose appropriate PPE that will protect employees from the hazards the material will present under the actual normal conditions of use.

Caution: HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. Although HMIS® ratings are not required on MSDSs under 29 CFR 1910.1200, the preparer, has chosen to provide them. HMIS® ratings are to be used only in conjunction with a fully implemented HMIS® program by workers who have received appropriate HMIS® training. HMIS® is a registered trade and service mark of the NPCA. HMIS® materials may be purchased exclusively from J. J. Keller (800) 327-6868.

4. FIRST AID MEASURES

General Advice
If symptoms persist, call a physician. Show this safety data sheet to the doctor in attendance.
Eye Contact
Immediately flush with plenty of water. After initial flushing, remove any contact lenses and continue flushing for at least 15 minutes. Keep eye wide open while rinsing. If symptoms persist, call a physician.

Skin Contact
Wash off immediately with soap and plenty of water removing all contaminated clothes and shoes. If skin irritation persists, call a physician.

Inhalation
Move to fresh air. If symptoms persist, call a physician.
If not breathing, give artificial respiration. Call a physician immediately

Ingestion
Clean mouth with water and afterwards drink plenty of water. Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Consult a physician.

Notes To Physician
Treat symptomatically

Protection Of First-Aiders
Use personal protective equipment

5. FIRE-FIGHTING MEASURES

Suitable Extinguishing Media
Foam, dry powder or water. Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Protective Equipment And Precautions For Firefighters
As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

Specific Hazards Arising From The Chemical
Combustible material. Closed containers may rupture if exposed to fire or extreme heat. Keep product and empty container away from heat and sources of ignition. Thermal decomposition can lead to release of irritating gases and vapors.

Sensitivity To Mechanical Impact
No

Sensitivity To Static Discharge
Yes

Flash Point Data
Flash Point (°F) 110
Flash Point (°C) 43
Flash Point Method PMCC

Flammability Limits In Air
Upper Explosion Limit Not available
Lower Explosion Limit Not available

NFPA
Health: 1 Flammability: 2 Instability: 0 Special: Not Applicable
NFPA Legend
0 - Not Hazardous
1 - Slightly
2 - Moderate
3 - High
4 - Severe

The ratings assigned are only suggested ratings, the contractor/employer has ultimate responsibilities for NFPA ratings where this system is used.

Additional information regarding the NFPA rating system is available from the National Fire Protection Agency (NFPA) at www.nfpa.org.

### 6. ACCIDENTAL RELEASE MEASURES

**Personal Precautions**
Use personal protective equipment. Remove all sources of ignition.

**Environmental Precautions**
Prevent further leakage or spillage if safe to do so. Do not allow material to contaminate ground water system. Prevent product from entering drains. Do not flush into surface water or sanitary sewer system. Local authorities should be advised if significant spillages cannot be contained.

**Methods For Clean-Up**
Dam up. Soak up with inert absorbent material. Pick up and transfer to properly labeled containers. Clean contaminated surface thoroughly.

**Other Information**
None known

### 7. HANDLING AND STORAGE

**Handling**
Use only in area provided with appropriate exhaust ventilation. Do not breathe vapors or spray mist. Wear personal protective equipment. Take precautionary measures against static discharges. To avoid ignition of vapors by static electricity discharge, all metal parts of the equipment must be grounded. Keep away from open flames, hot surfaces and sources of ignition.

**Storage**
Keep containers tightly closed in a dry, cool and well-ventilated place. Keep away from heat. Keep in properly labeled containers.

**DANGER** - Rags, steel wool or waste soaked with this product may spontaneously catch fire if improperly discarded. Immediately after use, place rags, steel wool or waste in a sealed water-filled metal container.

### 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

**Exposure Limits**

**Hazardous Components**

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>ACGIH</th>
<th>Alberta</th>
<th>British Columbia</th>
<th>Ontario</th>
<th>Quebec</th>
</tr>
</thead>
<tbody>
<tr>
<td>Soybean oil, polymer with pentaerythritol and phthalic anhydride</td>
<td>N/E</td>
<td>N/E</td>
<td>N/E</td>
<td>N/E</td>
<td>N/E</td>
</tr>
<tr>
<td>Hydrotreated heavy naphtha, petroleum</td>
<td>N/E</td>
<td>N/E</td>
<td>N/E</td>
<td>N/E</td>
<td>N/E</td>
</tr>
<tr>
<td>Titanium dioxide</td>
<td>10 mg/m³ - TWA</td>
<td>10 mg/m³ - TWA</td>
<td>10 mg/m³ - TWA</td>
<td>10 mg/m³ - TWA</td>
<td>10 mg/m³ - TWAES</td>
</tr>
</tbody>
</table>
Solvent naphtha, petroleum, medium aliphatic | N/E | N/E | N/E | 525 mg/m³ - TWAEV 140°C Flash aliphatic solvent | N/E
---|---|---|---|---|---
Kaolin | 2 mg/m³ - TWA | 2 mg/m³ - TWA | 2 mg/m³ - TWA particulate matter containing no asbestos and less than 1% crystalline silica | 2 mg/m³ - TWAEV containing no asbestos and less than 1% crystalline silica | 5 mg/m³ - TWAEV

Soybean Oil | N/E | N/E | N/E | N/E | N/E
---|---|---|---|---|---
Xylene | 100 ppm - TWA 150 ppm - STEL | 100 ppm - TWA 434 mg/m³ - TWA 150 ppm - STEL 651 mg/m³ - STEL | 100 ppm - TWA 150 ppm - STEL | 100 ppm - TWAEV 435 mg/m³ - TWAEV 150 ppm - STEV 650 mg/m³ - STEV | 100 ppm - TWAEV 434 mg/m³ - TWAEV 150 ppm - STEV 651 mg/m³ - STEV

Cobalt bis(2-ethylhexanoate) | N/E | N/E | N/E | N/E | N/E

Ethyl benzene | 20 ppm - TWA | 100 ppm - TWA 434 mg/m³ - TWA 125 ppm - STEL 543 mg/m³ - STEL | 20 ppm - TWA | 100 ppm - TWA 125 ppm - STEL | 100 ppm - TWAEV 434 mg/m³ - TWAEV 125 ppm - STEV 543 mg/m³ - STEV

Methyl ethyl ketoxime | N/E | N/E | N/E | N/E | N/E

Legend
ACGIH - American Conference of Governmental Industrial Hygienists
Alberta - Alberta Occupational Exposure Limits
British Columbia - British Columbia Occupational Exposure Limits
Ontario - Ontario Occupational Exposure Limits
Quebec - Quebec Occupational Exposure Limits
N/E - Not established

Engineering Measures
Ensure adequate ventilation, especially in confined areas.

Personal Protective Equipment

Eye/Face Protection: Safety glasses with side-shields.
Skin Protection: Long sleeved clothing. Protective gloves.
Respiratory Protection: In operations where exposure limits are exceeded, use a NIOSH approved respirator that has been selected by a technically qualified person for the specific work conditions. When spraying the product or applying in confined areas, wear a NIOSH approved respirator specified for paint spray or organic vapors.

Hygiene Measures
Avoid contact with skin, eyes and clothing. Remove and wash contaminated clothing before re-use. Wash thoroughly after handling. When using do not eat, drink or smoke.

9. PHYSICAL AND CHEMICAL PROPERTIES

| Appearance | liquid |
| Odor | solvent |
| Density (lbs/gal) | 8.6 - 8.7 |
| Specific Gravity | 1.0 - 1.1 |
| pH | Not available |
| Viscosity (centistokes) | Not available |
9. PHYSICAL AND CHEMICAL PROPERTIES

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Evaporation Rate</td>
<td>Not available</td>
</tr>
<tr>
<td>Vapor Pressure</td>
<td>Not available</td>
</tr>
<tr>
<td>Vapor Density</td>
<td>Not available</td>
</tr>
<tr>
<td>Wt. % Solids</td>
<td>60 - 70</td>
</tr>
<tr>
<td>Vol. % Solids</td>
<td>45 - 55</td>
</tr>
<tr>
<td>Wt. % Volatiles</td>
<td>30 - 40</td>
</tr>
<tr>
<td>Vol. % Volatiles</td>
<td>45 - 55</td>
</tr>
<tr>
<td>VOC Regulatory Limit (g/L)</td>
<td>&lt; 400</td>
</tr>
<tr>
<td>Boiling Point (°F)</td>
<td>340</td>
</tr>
<tr>
<td>Boiling Point (°C)</td>
<td>171</td>
</tr>
<tr>
<td>Freezing Point (°F)</td>
<td>Not available</td>
</tr>
<tr>
<td>Freezing Point (°C)</td>
<td>Not available</td>
</tr>
<tr>
<td>Flash Point (°F)</td>
<td>110</td>
</tr>
<tr>
<td>Flash Point (°C)</td>
<td>43</td>
</tr>
<tr>
<td>Flash Point Method</td>
<td>PMCC</td>
</tr>
<tr>
<td>Upper Explosion Limit</td>
<td>Not available</td>
</tr>
<tr>
<td>Lower Explosion Limit</td>
<td>Not available</td>
</tr>
</tbody>
</table>

10. STABILITY AND REACTIVITY

Chemical Stability
Stable under normal conditions. Hazardous polymerisation does not occur.

Conditions To Avoid
Keep away from open flames, hot surfaces, static electricity and sources of ignition.

Incompatible Materials
Incompatible with strong acids and bases and strong oxidizing agents.

Hazardous Decomposition Products
Thermal decomposition can lead to release of irritating gases and vapors.

Possibility Of Hazardous Reactions
None under normal conditions of use.

11. TOXICOLOGICAL INFORMATION

Acute Toxicity
Product
Repeated or prolonged exposure to organic solvents may lead to permanent brain and nervous system damage. Intentional misuse by deliberately concentrating and inhaling vapors may be harmful or fatal.

Component
Hydrotreated heavy naphtha, petroleum
LD50 Oral: > 5,000 mg/kg (Rat) vendor data
LD50 Dermal: > 3,160 mg/kg (Rabbit)
Titanium dioxide
LD50 Oral: > 10000 mg/kg (Rat)
LD50 Dermal: > 10000 mg/m³ (Rabbit)
LC50 Inhalation (Dust): > 6.82 mg/L (Rat, 4 hr.)

Solvent naphtha, petroleum, medium aliphatic
LD50 Oral: > 6240 mg/kg (Rat)
LD50 Dermal: > 3120 mg/kg (Rabbit)
LC50 Inhalation (Vapor): 1400 ppm (Rat, 4 hr.)

Kaolin
LD50 Oral: > 5000 mg/kg (Rat)

Xylene
LD50 Oral: 4300 mg/kg (Rat)
LD50 Dermal: > 1700 mg/kg (Rabbit)
LC50 Inhalation (Vapor): 5000 ppm (Rat, 4 hr.)
Sensitization: No sensitizing effects known.

Ethyl benzene
LD50 Oral: 3500 mg/kg (Rat)
LD50 Dermal: > 5000 mg/kg (Rabbit)
LC50 Inhalation (Vapor): 55000 mg/m³ (Rat, 2 hr.)
Sensitization: No sensitizing effects known.

Methyl ethyl ketoxime
LD50 Oral: 930 mg/kg (Rat)
LD50 Dermal: 200 µL/kg (Rabbit)
LC50 Inhalation (Vapor): > 4.8 mg/L (Rat)

Chronic Toxicity

Carcinogenicity
The information below indicates whether each agency has listed any ingredient as a carcinogen:

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>ACGIH</th>
<th>IARC</th>
<th>NTP</th>
<th>OSHA Carcinogen</th>
</tr>
</thead>
<tbody>
<tr>
<td>Titanium dioxide</td>
<td></td>
<td>2B - Possible Human Carcinogen</td>
<td></td>
<td>Listed</td>
</tr>
<tr>
<td>Cobalt bis(2-ethylhexanoate)</td>
<td></td>
<td>2B - Possible Human Carcinogen</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ethyl benzene</td>
<td>A3 - Confirmed Animal Carcinogen with Unknown Relevance to Humans</td>
<td>2B - Possible Human Carcinogen</td>
<td></td>
<td>Listed</td>
</tr>
</tbody>
</table>
• Although IARC has classified titanium dioxide as possibly carcinogenic to humans (2B), their summary concludes: "No significant exposure to titanium dioxide is thought to occur during the use of products in which titanium dioxide is bound to other materials, such as paint."
• Cobalt and cobalt compounds are listed as possible human carcinogens by IARC (2B). However, there is inadequate evidence of the carcinogenicity of cobalt and cobalt compounds in humans.

Legend
ACGIH - American Conference of Governmental Industrial Hygienists
IARC - International Agency for Research on Cancer
NTP - National Toxicity Program
OSHA - Occupational Safety & Health Administration

12. ECOLOGICAL INFORMATION

Ecotoxicity Effects

Product

Acute Toxicity to Fish
No information available

Acute Toxicity to Aquatic Invertebrates
No information available

Acute Toxicity to Aquatic Plants
No information available

Component

Acute Toxicity to Fish

Titanium dioxide
LC50: >1000 mg/L (Fathead Minnow - 96 hr.)

Xylene
LC50: 13.5 mg/L (Rainbow Trout - 96 hr.)

Ethyl benzene
LC50: 12.1 mg/L (Fathead Minnow - 96 hr.)

Methyl ethyl ketoxime
LC50: 48 mg/L (Bluegill sunfish - 96 hr.)

Acute Toxicity to Aquatic Invertebrates

Ethyl benzene
EC50: 1.8 mg/L (Daphnia magna - 48 hr.)

Methyl ethyl ketoxime
EC50: 750 mg/L (Daphnia magna - 48 hr.)
12. ECOLOGICAL INFORMATION

Acute Toxicity to Aquatic Plants

Ethyl benzene
EC50: 4.6 mg/L (Green algae (Scenedesmus subspicatus), 72 hrs.)

13. DISPOSAL CONSIDERATIONS

Waste Disposal Method
Dispose of in accordance with federal, state, provincial, and local regulations. Local requirements may vary, consult your sanitation department or state-designated environmental protection agency for more disposal options.

Empty Container Warning
Emptied containers may retain product residue. Follow label warnings even after container is emptied. Residual vapors may explode on ignition.

14. TRANSPORT INFORMATION

TDG
Proper Shipping Name: Paint
Hazard Class: 3
UN-No: UN1263
Packing Group: III

In Canada, Class 3 flammable liquids may be reclassified as non-regulated for domestic ground transportation if they meet the requirements of TDG General Exemption SOR/2008-34.

ICAO / IATA
Contact the preparer for further information.

IMDG / IMO
Contact the preparer for further information.

15. REGULATORY INFORMATION

International Inventories

United States TSCA
Yes - All components are listed or exempt.

Canada DSL
Yes - All components are listed or exempt.

National Pollutant Release Inventory (NPRI)

NPRI Parts 1-4
This product contains the following Parts 1-4 NPRI chemicals:
15. REGULATORY INFORMATION

This product may contain trace amounts of (other) NPRI Parts I-4 reportable chemicals. Contact the preparer for further information.

**NPRI Part 5**
This product contains the following NPRI Part 5 Chemicals:

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>CAS-No</th>
<th>Weight % (max)</th>
</tr>
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<tbody>
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<td>Xylene</td>
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<td>1 - 5%</td>
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</table>

This product may contain trace amounts of (other) NPRI Part 5 reportable chemicals. Contact the preparer for further information.

**WHMIS Regulatory Status**
This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all the information required by the CPR.

**WHMIS Hazard Class**
- B3 Combustible liquid
- B6 Reactive flammable material
- D2A Very toxic materials

![Fire and Exclamation Mark]

16. OTHER INFORMATION

**WARNING!** If you scrape, sand, or remove old paint, you may release lead dust. LEAD IS TOXIC. EXPOSURE TO LEAD DUST CAN CAUSE SERIOUS ILLNESS, SUCH AS BRAIN DAMAGE, ESPECIALLY IN CHILDREN. PREGNANT WOMEN SHOULD ALSO AVOID EXPOSURE. Wear a NIOSH approved respirator to control lead exposure. Clean up carefully with a HEPA vacuum and a wet mop. Before you start, find out how to protect yourself and your family by logging onto Health Canada @ http://www.hc-sc.gc.ca/hl-vs/iyh-vsv/prod/paint-peinture-eng.php.

**Prepared By**
Product Stewardship Department
Benjamin Moore & Co.
101 Paragon Drive
Monvale, NJ  07645
855-724-6802

**Revision Date:** 23-Sep-2013
Revision Summary

No information available

Disclaimer

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