

IMPAX 200 RESIN

This product appears in the following stock number(s):

2201A 2202A 2204A 2206A 2210R 2220R 2229A 2230A
2231A 2232A 2233A

Last revised: 10/02/03

Printed: 2/24/2004

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Tradename: IMPAX 200 RESIN

General use: The information below applies to the resin component of the kit. After proper curing, this product is not hazardous.

Chemical family: Aromatic di-isocyanate adduct

MANUFACTURER

ITW Philadelphia Resins
130 Commerce Dr.
Montgomeryville, PA 18936

EMERGENCY INFORMATION

Emergency telephone number
(CHEMTREC): (800) 424-9300
Other Calls: (215) 855-8450

2. COMPOSITION/INFORMATION ON INGREDIENTS**HAZARDOUS CONSTITUENTS****Exposure limits**

| Constituent | Abbr. | CAS No. | Weight percent | ACGIH TLV | OSHA PEL | Other Limits |
|--------------------------|---------|----------|----------------|-----------|----------|------------------|
| Ethyl benzene | | 100414 | 10-20 | 100 ppm | 100 ppm | 100 ppm (Canada) |
| Toluene | | 108883 | < 1 | 50 ppm | 200 ppm | n/e |
| Xylene | | 1330207 | 45-55 | 100 ppm | 100 ppm | 100 ppm (Canada) |
| Toluene-1,3-Diisocyanate | 1,3-TDI | 26471625 | < 2 | n/e | n/e | n/e |
| Moisture Cure Resin | | * | 35-45 | n/e | n/e | n/e |

"TLV" means the Threshold Limit Value exposure (eight-hour, time-weighted average, unless otherwise noted) established by the American Conference of Governmental Industrial Hygienists. "STEL" indicates a short-term exposure limit. "PEL" indicates the OSHA Permissible Exposure Limit. "n/e" indicates that no exposure limit has been established. An asterisk (*) indicates a substance whose identity is a trade secret of our supplier and unknown to us.

3. HAZARDS IDENTIFICATION**Emergency Overview**

Appearance, form, odor: Clear amber liquid with aromatic odor.

WARNING! Flammable. Eye, skin and respiratory irritant. Potential skin and respiratory sensitizer. May cause central nervous system effects. Contains a component which is a suspected human carcinogen based on tests with laboratory animals.

Potential health effects

Primary routes of exposure: Skin contact Skin absorption Eye contact Inhalation Ingestion

Symptoms of acute overexposure:

Skin: May cause localized irritation, swelling and dryness of skin.

Eyes: May cause moderate to severe irritation.

Inhalation:

May cause irritation of the respiratory tract, headache, dizziness, nausea.

Ingestion:

No data were found on acute effects.

Effects of chronic overexposure:

May produce skin and respiratory sensitization. TDI was found carcinogenic in animal tests by ingestion and may be carcinogenic by inhalation. TARGET ORGANS: Eye, skin, respiratory system, CNS, GI tract, blood, liver, kidney, spleen, heart and adrenals.

Carcinogenicity -- OSHA regulated: No

ACGIH: No

National Toxicology Program: Yes

International Agency for Research on Cancer: Yes

Cancer-suspect constituent(s) : TDI; Ethyl benzene

Medical conditions which may be aggravated by exposure:

People with bronchial hyperreactivity or isocyanate hypersensitivity will be affected by concentrations below the TLV.

Other effects:

See Section 11.

4. FIRST AID MEASURES**First aid for eyes:**

Flush eye with clean water for at least 15 minutes while gently holding eyelids open. Get immediate medical attention.

First aid for skin:

Remove contaminated clothing. Wash affected area with soap and water. Consult a physician if symptoms (rash, irritation, swelling, etc.) persists.

First aid for inhalation:

Remove to fresh air; give artificial respiration or oxygen as needed; get medical attention.

First aid for ingestion:

Do NOT induce vomiting; if patient is conscious, give milk or water. Consult a physician immediately.

5. FIRE FIGHTING MEASURES**Extinguishing media:**

Water

Carbon dioxide

Dry chemical

Foam

Alcohol foam

Flash Point (°F): 77

Method: TCC

Explosive limits in air (percent) -- Lower: 0.9

Upper: n/d

Special firefighting procedures:

Firefighters should wear self-contained breathing apparatus and protective clothing.

Unusual fire and explosion hazards:

May produce irritating gases or mists from decomposition or combustion.

Hazardous products of combustion:

Oxides of carbon and nitrogen, traces of hydrogen cyanide, volatilized isocyanates and other unidentified organic combustion products.

6. ACCIDENTAL RELEASE MEASURES**Spill control:**

Evacuate and ventilate area. Wear full protective equipment including respiratory equipment. Dike spill to prevent entry into water system. A blanket of protein foam may be placed over spill for temporary control of isocyanate vapor.

Containment:

Dike with sawdust or other absorbent.

Cleanup:

Pump large quantities into closed but not sealed container. Absorb small spills with absorbent and shovel into unsealed containers, transport to well-ventilated area (outside) and treat with neutralizing solution (allow to stand 48 hrs uncovered to allow CO₂ to escape). Decontaminate residual area with neutralizing solution (allow to stand 15 minutes).

Special procedures:

Neutralizing solution: 90% water, 3-8% concentrated ammonia, 2% detergent; mix 10 parts neutralizer to 1 part isocyanate.

7. HANDLING AND STORAGE**Handling precautions:**

Do not breathe aerosols or vapors, material can produce asthmatic sensitization upon either single inhalation exposure to a relatively high concentration or upon repeated lower concentrations. Keep hands away from eyes when handling this material. Wash thoroughly after using, especially before eating or smoking. Ground container when pouring. Keep away from heat, flame or sparks. Use non-sparking tools.

Storage:

Store tightly closed in a cool, dry place (64-86 F). Don't let moisture contaminate this material; it reacts with water to release carbon dioxide, which could build up pressure in closed containers and lead to bursting (do NOT reseal if moisture contamination is suspected). Shelf life- 6 months.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION**Engineering controls****Ventilation :**

Design ventilation to keep vapor concentration below the TLV. General mechanical ventilation is normally adequate for occasional use in open areas; local exhaust is recommended for repeated use or in confined areas.

Other engineering controls :

Isocyanate exposure levels must be monitored. Medical supervision of all employees who handle or come in contact with isocyanates is recommended (i.e. FEV, FVC); once sensitized no further exposure can be permitted. Provide safety showers and eye wash stations.

Personal protective equipment**Eye and face protection:**

Safety glasses with side shields or splash proof goggles.

Skin protection:

Chemical resistant rubber gloves and other protective clothing as required to prevent skin contact.

Respiratory protection:

None required at normal handling temperatures with adequate ventilation. A positive pressure, supplied air respirator or a self-contained breathing apparatus when concentrations of TDI exceed the TLV.

9. PHYSICAL AND CHEMICAL PROPERTIES

| | | | |
|------------------------------------|--------------|----------------------------------------------|----------------|
| Specific gravity: | 1.0 | Boiling point (°F): | 275-288 |
| Melting point (°F): | n/d | Vapor density (air = 1): | > 1 |
| Vapor pressure (mmHg): | n/d at 68 °F | Evaporation rate (butyl acetate = 1): | >1 |
| VOC (grams/liter): | 661 | Solubility in water: | Slight; reacts |
| Percent volatile by volume: | > 50 | pH (5% solution or slurry in water): | 5 |
| Percent solids by weight: | < 50 | | |

10. STABILITY AND REACTIVITY

This material is chemically stable. Hazardous polymerization will not occur.

Conditions to avoid :

High heat and open flame.

Incompatible materials:

Moisture (reacts slowly, releasing CO₂); alcohols, amines, bases, strong oxidizers.

Hazardous products of decomposition:

Oxides of carbon and nitrogen, traces of hydrogen cyanide, volatilized isocyanates (ie MDI, TDI) and other unidentified organic combustion products.

Conditions under which hazardous polymerization may occur:

None

11. TOXICOLOGICAL INFORMATION

Acute oral effects: LD50 (rat): No data available.

Acute dermal effects: LD50 (rabbit): No data available.

TDI has produced dermal sensitization in several species.

Acute inhalation effects: LC50 (rat): No data available.

Exposure: 4 hours.

Respiratory sensitization response in guinea pigs.

Subchronic effects:

Not available.

Carcinogenicity, teratogenicity, and mutagenicity:

TDI is a suspect carcinogen. Deliberate inhalation of high concentrations of toluene vapor by pregnant women has been shown to adversely affect the fetus. These fetotoxic effects include intrauterine growth retardation and delayed

postnatal development. The fetotoxic effects of toluene seen in laboratory animals are similar to those seen in humans.

Other chronic effects:

Not available.

Toxicological information on hazardous chemical constituents of this product:

| Constituent | Oral LD50 (rat) | Dermal LD50 (rabbit) | Inhalation LC50 4hr, (rat) |
|--------------------------|--------------------|-------------------------|-------------------------------|
| Ethyl benzene | 3500 mg/kg | 17800 ppm | >4000 ppm |
| Toluene | 636 mg/kg | 14100 uL/kg | n/d |
| Xylene | 4300 mg/kg | >1700 mg/kg | 5000 ppm |
| Toluene-1,3-Diisocyanate | 4130 mg/kg | >10mL/kg | n/d |
| Moisture Cure Resin | n/d | n/d | n/d |

'n/d' = 'not determined'

12 ECOLOGICAL INFORMATION**Ecotoxicity:**

No data available.

Mobility and persistence:

No data available.

Environmental fate:

No data available.

13. DISPOSAL CONSIDERATIONS

Please see also Section 15, Regulatory Information.

Waste management recommendations:

Discard in accordance with federal, state and local regulation. Incineration is the preferred method.

14. TRANSPORT INFORMATION

Proper shipping name: Resin solution
Technical name : N/A
Hazard class : 3
UN number: 1866
Packing group: III
Emergency Response Guide no.: 127
IMDG page number: N/A
Other: N/A

15. REGULATORY INFORMATION**U.S. Federal Regulations****TSCA**

All ingredients of this product are listed, or are exempt from listing, on the TSCA inventory.

The following RCRA code(s) applies to this material if it becomes waste:

D001

Regulatory status of hazardous chemical constituents of this product:

| Constituent | Extremely Hazardous* | Toxic Chemical** | CERCLA RQ (lbs) | TSCA 12B Export Notification |
|--------------------------|----------------------|------------------|-----------------|------------------------------|
| Ethyl benzene | No | Yes | 1000.0 | Required |
| Toluene | No | Yes | 1000.0 | Not required |
| Xylene | No | Yes | 100.0 | Not required |
| Toluene-1,3-Diisocyanate | No | Yes | 100.0 | Not required |
| Moisture Cure Resin | No | No | 0.0 | Not required |

*Consult the appropriate regulations for emergency planning and release reporting requirements for substances on the SARA Section 301 Extremely Hazardous Substance list.

**Substances for which the "Toxic Chemical" column is marked "Yes" are on the SARA Section 313 list of Toxic Chemicals, for which release reporting may be required. For specific requirements, consult the appropriate regulations.

For purposes of SARA Section 312 hazardous materials inventory reporting, the following hazard classes apply to this material: - Immediate health hazard -- Delayed health hazard -- Fire hazard -

Canadian regulations

WHMIS hazard class(es) : B2; D2A;D2B;DIB

California regulations:

For purposes of the California Safe Drinking Water and Toxic Enforcement Act of 1986 (Prop. 65), this product contains a chemical or chemicals known to the State of California to cause cancer.

16. OTHER INFORMATION

**Hazardous Materials
Identification System (HMIS)
ratings:**

Health**3*****Flammability****3****Reactivity****1****Revisions for this issue:**

| MSDS section | Revisions |
|---------------------|----------------------------------|
| 3 | Ethyl benzene updated to IARC 2B |

The information and recommendations in this document are based on the best information available to us at the time of preparation, but we make no other warranty, express or implied, as to its correctness or completeness, or as to the results of reliance on this document.

IMPAX 200 RED AGGREGATE

This product appears in the following stock number(s):

2204A 2231A

Last revised: 01/21/04

Printed: 2/24/2004

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION**Tradename:** IMPAX 200 RED AGGREGATE**General use:** This information applies to the aggregate mixture sold with resin and hardener. After mixing, handle uncured material as for the hardener. After curing, this product is not hazardous.**Chemical family:** Inorganic particulate mixture**MANUFACTURER**ITW Philadelphia Resins
130 Commerce Dr.
Montgomeryville, PA 18936**EMERGENCY INFORMATION****Emergency telephone number****(CHEMTREC): (800) 424-9300****Other Calls: (215) 855-8450****2. COMPOSITION/INFORMATION ON INGREDIENTS****HAZARDOUS CONSTITUENTS****Exposure limits**

| Constituent | Abbr. | CAS No. | Weight percent | ACGIH TLV | OSHA PEL | Other Limits |
|--------------------|-------|----------|----------------|------------------------|-----------------------------|------------------------------------|
| Limestone | | 1317653 | 10-30 | 10 mg/m ³ | 15 mg/m ³ | 10 mg/m ³ (Canada) |
| Crystalline silica | | 14808607 | < 1 | 0.05 mg/m ³ | 10/(%Q+2) mg/m ³ | 0.10 mg/m ³ (Canada) |

"TLV" means the Threshold Limit Value exposure (eight-hour, time-weighted average, unless otherwise noted) established by the American Conference of Governmental Industrial Hygienists. "STEL" indicates a short-term exposure limit. "PEL" indicates the OSHA Permissible Exposure Limit. "n/e" indicates that no exposure limit has been established. An asterisk (*) indicates a substance whose identity is a trade secret of our supplier and unknown to us.

3. HAZARDS IDENTIFICATION**Emergency Overview**

Appearance, form, odor: Pigmented sand with no odor.

CAUTION! Mechanical irritant. Dusts may cause respiratory irritation.**Potential health effects****Primary routes of exposure:** Skin contact Skin absorption Eye contact Inhalation Ingestion**Symptoms of acute overexposure:****Skin:** Abrasive. May cause irritation (drying, redness).**Eyes:** May irritate the eyes (watering, burning sensation, redness). Rubbing may cause abrasion.**Inhalation:**

Can be irritating to the respiratory tract. Symptoms include sneezing and nose irritation.

Ingestion:

Ingestion of large quantities may cause intestinal obstruction and/or constipation.

Effects of chronic overexposure:

Repeated or prolonged use may cause drying of skin.

Carcinogenicity -- OSHA regulated: No

ACGIH: No

National Toxicology Program: Yes

International Agency for Research on Cancer: Yes

Cancer-suspect constituent(s) : Silica

Medical conditions which may be aggravated by exposure:

The condition of individuals with eye, skin and lung disease may be aggravated by exposure.

Other effects:

Chronic exposure to respirable limestone dust at concentrations exceeding occupational exposure limits may increase the risk of developing pneumoconiosis (lung disease). This product contains quartz as an impurity, exposure to respirable crystalline silica dust at concentrations exceeding occupational exposure limits may cause silcosis (lung disease).

4. FIRST AID MEASURES**First aid for eyes:**

Avoid rubbing particles into the eyes. Flush with a gentle flow of clean water. Contact a physician if irritation persists.

First aid for skin:

No first aid needed for simple skin contact. If particles are driven into skin, wash thoroughly and bandage if needed.

First aid for inhalation:

Remove patient to fresh air. Administer oxygen if breathing is difficult. Get medical attention if symptoms are serious or persistent.

First aid for ingestion:

Consult a physician.

5. FIRE FIGHTING MEASURES**Extinguishing media:**

Water

Carbon dioxide

Dry chemical

Foam

Alcohol foam

Flash Point (°F): None

Method: not applicable

Explosive limits in air (percent) -- Lower: none

Upper: none

Special firefighting procedures:

Does not support combustion with oxygen.

Unusual fire and explosion hazards:

None

Hazardous products of combustion:

None

6. ACCIDENTAL RELEASE MEASURES**Spill control:**

Avoid inhalation of dusts if any are raised.

Containment:

N/A

Cleanup:

Shovel or sweep up for re-use or disposal.

Special procedures:

N/A

7. HANDLING AND STORAGE**Handling precautions:**

Avoid creating and inhaling dusts of this product.

Storage:

Store in closed containers.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION**Engineering controls****Ventilation :**

Mechanical ventilation as required to keep dust concentration below the TLV.

Other engineering controls :

Have emergency shower and eye wash stations available.

Personal protective equipment**Eye and face protection:**

Safety glasses with side shields.

Skin protection:

Long-sleeved clothing.

Respiratory protection:

Should dust be raised in handling (unlikely), wear NIOSH-approved dust respirator.

9. PHYSICAL AND CHEMICAL PROPERTIES

| | | | |
|------------------------------------|--------------|----------------------------------------------|----------|
| Specific gravity: | 2.57 | Boiling point (°F): | 4226 |
| Melting point (°F): | 3110 | Vapor density (air = 1): | No vapor |
| Vapor pressure (mmHg): | Nil at 78 °F | Evaporation rate (butyl acetate = 1): | Nil |
| VOC (grams/liter): | 0 | Solubility in water: | Nil |
| Percent volatile by volume: | 0 | pH (5% solution or slurry in water): | Neutral |
| Percent solids by weight: | 100 | | |

10. STABILITY AND REACTIVITY

This material is chemically stable. Hazardous polymerization will not occur.

Conditions to avoid :

None

Incompatible materials:

Extremely powerful oxidizers (e.g. fluorine, oxygen difluoride, manganese trioxide, chlorine trifluoride)

Hazardous products of decomposition:

None

Conditions under which hazardous polymerization may occur:

None

11. TOXICOLOGICAL INFORMATION

Acute oral effects: LD50 (rat): No data

Acute dermal effects: LD50 (rabbit): No data

Acute inhalation effects: LC50 (rat): No data

Exposure: 0 hours.

Eye irritation:

No data available.

Subchronic effects:

No data available.

Carcinogenicity, teratogenicity, and mutagenicity:

No data available.

Other chronic effects:

Respirable crystalline quartz may cause chronic lung injury (silicosis). Acute or rapid silicosis may occur in a short period of time in heavy exposure in certain occupations such as sandblasters. Silicosis is a form of disabling pulmonary fibrosis which can be progressive and may lead to death. Pulmonary function may be reduced by inhalation of respirable crystalline silica. It may produce lung scarring which may lead to a progressive massive fibrosis, increasing susceptibility to pulmonary tuberculosis. Progressive massive fibrosis may be accompanied by right heart enlargement, heart failure, and pulmonary failure. Smoking aggravates the effects of exposure.

Toxicological information on hazardous chemical constituents of this product:

| Constituent | Oral LD50 (rat) | Dermal LD50 (rabbit) | Inhalation LC50 4hr, (rat) |
|--------------------|-----------------|----------------------|----------------------------|
| Limestone | n/d | n/d | n/d |
| Crystalline silica | n/d | n/d | n/d |

'n/d' = 'not determined'

12 ECOLOGICAL INFORMATION**Ecotoxicity:**

No data available.

Mobility and persistence:

No data available.

Environmental fate:

No data available.

13. DISPOSAL CONSIDERATIONS

Please see also Section 15, Regulatory Information.

Waste management recommendations:

The aggregate may be discarded in landfills as nonhazardous waste.

14. TRANSPORT INFORMATION

Proper shipping name: Non-regulated
Technical name : N/A
Hazard class : N/A
UN number: N/A
Packing group: N/A
Emergency Response Guide no.: N/A
IMDG page number: N/A
Other: N/A

15. REGULATORY INFORMATION**U.S. Federal Regulations****TSCA**

All ingredients of this product are listed, or are exempt from listing, on the TSCA inventory.

The following RCRA code(s) applies to this material if it becomes waste:

None

Regulatory status of hazardous chemical constituents of this product:

| Constituent | Extremely Hazardous* | Toxic Chemical** | CERCLA RQ (lbs) | TSCA 12B Export Notification |
|--------------------|----------------------|------------------|-----------------|------------------------------|
| Limestone | No | No | 0.0 | Not required |
| Crystalline silica | No | No | 0.0 | Not required |

*Consult the appropriate regulations for emergency planning and release reporting requirements for substances on the SARA Section 301 Extremely Hazardous Substance list.

**Substances for which the "Toxic Chemical" column is marked "Yes" are on the SARA Section 313 list of Toxic Chemicals, for which release reporting may be required. For specific requirements, consult the appropriate regulations.

For purposes of SARA Section 312 hazardous materials inventory reporting, the following hazard classes apply to this material: - Immediate health hazard -- Delayed health hazard -

Canadian regulations

WHMIS hazard class(es) : D2B; D2A**California regulations:**

For purposes of the California Safe Drinking Water and Toxic Enforcement Act of 1986 (Prop. 65), this product contains a chemical or chemicals known to the State of California to cause cancer.

16. OTHER INFORMATION

**Hazardous Materials
Identification System (HMIS)
ratings:**

Health**1*****Flammability****0****Reactivity****0**

The information and recommendations in this document are based on the best information available to us at the time of preparation, but we make no other warranty, express or implied, as to its correctness or completeness, or as to the results of reliance on this document.