

Material Safety Data Sheet

acc. to ISO/DIS 11014

Printing Date 07/20/2010

Revision Number 1




Reviewed on 10/08/2009

1 Identification of substance

- **Product details**
- **Trade name:** 46505 (Hardman Epocap 16505 Part A)
- **Article number:** 46505
- **Manufacturer/Supplier:**
Royal Adhesives And Sealants, LLC
2001 W. Washington Street
South Bend IN 46628-2023
- **Information department:** Environment protection department.
- **Emergency information:** ChemTrec: UNITED STATES 1(800)424-9300 INTERNATIONAL 202-483-7616

2 Composition/Data on components

- **Chemical characterization**
- **Description:** Mixture of the substances listed below with nonhazardous and Trade Secret addition(s).
- **Dangerous components:**
For Trade Secret information refer to 29 CFR 1910.120.

25068-38-6	Epoxy Resin	Warning:  3.2/2, 3.3/2A, 3.4.S/1  4.1.C/2	25-50%
471-34-1	calcium carbonate		25-50%
	Trade Secret	Warning:  3.2/2, 3.4.S/1	2.5-10%
	Amorphous Fumed Silica		≤2.5%
14808-60-7	Quartz (SiO ₂)		≤2.5%

- **Additional information:** For the wording of the listed risk phrases refer to section 15.

3 Hazards identification

- **Hazard description:**
Irritant
Dangerous for the environment
- **Information pertaining to particular dangers for man and environment:**
Irritating to eyes and skin.
May cause sensitisation by skin contact.
Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
Contains epoxy constituents. See information supplied by the manufacturer.
- **Classification system:**
The classification was made according to the latest editions of international substances lists, and expanded upon from company and literature data.
- **NFPA ratings (scale 0 - 4)**



Health = 2
Fire = 1
Reactivity = 0

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· HMIS-ratings (scale 0 - 4)

HEALTH	2	Health = 2
FIRE	1	Fire = 1
PHYSICAL HAZARD	0	Physical Hazard = 0

· GHS label elements

Exclamation mark **Warning**

3.2/2 - Causes skin irritation.

3.3/2A - Causes serious eye irritation.

3.4/1 - May cause an allergic skin reaction.

Environment

4.1/2 - Toxic to aquatic life with long lasting effects.

· Prevention:

Avoid breathing dust/fume/gas/mist/vapours/spray.

Wear protective gloves/protective clothing/eye protection/face protection.

· Response:

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

Specific treatment (see on this label).

Take off contaminated clothing and wash before reuse.

· Disposal:

Dispose of contents/container in accordance with local/regional/national/international regulations.

4 First aid measures

· After inhalation:

Remove to fresh air. If not breathing, administer artificial respiration. If breathing is difficult, oxygen should be administered by qualified personnel. Call a physician or transport to a medical facility.

Supply fresh air and to be sure call for a doctor.

In case of unconsciousness place patient stably in side position for transportation.

Call a doctor immediately.

Overexposure, remove to fresh air and seek medical attention.

· After skin contact: Immediately wash with water and soap and rinse thoroughly.

· After eye contact:

Rinse opened eye for 15 minutes under running water. If eye becomes irritated, obtain medical treatment.

Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor.

· After swallowing:

Contact a doctor, medical facility, or poison control center for advice about whether to induce vomiting.

Swallowing small amounts of this product during normal handling is not likely to cause harmful effects.

Swallowing large amounts may be harmful.

Seek medical treatment.

5 Fire fighting measures

· **Suitable extinguishing agents:** CO₂, extinguishing powder or water spray. Fight larger fires with water spray.· **Protective equipment:** Protective clothing and respiratory protective device.

6 Accidental release measures

· **Person-related safety precautions:** Wear protective equipment. Keep unprotected persons away.· **Measures for environmental protection:** Do not allow to enter sewers/ surface or ground water.

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· **Measures for cleaning/collecting:**

Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
 Dispose of contaminated material as waste in accordance with federal state and local regulations.
 Ensure adequate ventilation.

7 Handling and storage

· **Handling:**

- **Information for safe handling:** Ensure good ventilation/exhaustion at the workplace.
- **Information about protection against explosions and fires:** No special measures required.

· **Storage:**

- **Requirements to be met by storerooms and receptacles:** Store in a cool location away from direct heat.
- **Information about storage in one common storage facility:** Keep away from open flames and high temperatures.
- **Further information about storage conditions:** Store in cool, dry conditions in well sealed receptacles.

8 Exposure controls and personal protection

- **Additional information about design of technical systems:** No further data.

· **Components with limit values that require monitoring at the workplace:**

471-34-1 calcium carbonate (25-50%)

PEL	15* 5** mg/m ³ *total dust **respirable fraction
REL	10* 5** mg/m ³ *total dust **respirable fraction
TLV	TLV withdrawn

14808-60-7 Quartz (SiO₂) (≤2.5%)

PEL	see Quartz listing
REL	0.05* mg/m ³ *respirable dust
TLV	0.025* mg/m ³ *as respirable fraction

· **Additional information:**

This product contains crystalline silica (Quartz) which is not hazardous in a wet or encapsulated state. However, if a formula containing hazardous fillers is reduced to a respirable fraction by grinding or putting into an airborne powder, the powder is considered a hazardous material.
 The lists that were valid during the creation were used as basis.

· **Personal protective equipment (see listings below)**

· **General protective and hygienic measures:**

Keep away from foodstuffs, beverages and feed.
 Immediately remove all soiled and contaminated clothing.
 Wash hands before breaks and at the end of work.
 Avoid contact with the eyes and skin.

· **Breathing equipment:**

Not required.

In the absence of adequate ventilation, use NIOSH-certified respiratory protection when chemical exposure is excessive or above an established exposure limit. Comply with OSHA 29 CFR 1910.134.

· **Protection of hands:**

Protective gloves

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.

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- **Material of gloves**
Nitrile rubber, NBR
Chloroprene rubber, CR
- **Eye protection:**
Safety glasses with side shields.



Tightly sealed goggles

- **Body protection:**
Emergency showers and eye wash stations should be available.
Protective work clothing

*

9 Physical and chemical properties

· General Information

Form: Liquid
Color: Off White
Odor: Characteristic

· Change in condition

Melting point: Undetermined.
Boiling point: Undetermined.

· **Flash point:** > 96°C (> 205°F)

· **Auto igniting:** Product is not selfigniting.

· **Danger of explosion:** Product does not present an explosion hazard.

· **Specific gravity at 20°C (68°F):** 1.55 g/cm³

· Solubility in / Miscibility with

Water: Not miscible or difficult to mix.

· Solvent content:

Organic solvents: 0.0 %
VOC (Per EPA 24) N/A GMS/L

Solids content: 100.0 %

10 Stability and reactivity

- **Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.
- **Materials to be avoided:**
- **Dangerous reactions** Strong oxidizing agents.
- **Dangerous products of decomposition:** Carbon Monoxide, Carbon Dioxide, Aldehydes, acids.

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11 Toxicological information

- **Acute toxicity:**
- **Primary irritant effect:**
- **on the skin:**
May irritate the skin.
Irritant to skin and mucous membranes.
- **on the eye:** May irritate the eye.
- **Sensitization:** Skin Contact - Sensitization possible through skin contact.
- **Additional toxicological information:**
Preexisting eye, skin and respiratory disorders may be aggravated by exposure to this product.

12 Ecological information

- **Ecotoxicological effects:**
- **Remark:** Toxic for fish
- **Additional ecological information:**
- **General notes:**
Water hazard class 2 (Self-assessment): hazardous for water
Do not allow product to reach ground water, water course or sewage system.
Also poisonous for fish and plankton in water bodies.
Toxic for aquatic organisms

13 Disposal considerations

- **Product:**
- **Recommendation:**
Disposal must be made according Federal, State and local regulations.
Must not be disposed of together with household garbage. Do not allow product to reach sewage system.
- **Uncleaned packagings:**
- **Recommendation:**
Disposal must be made according to official regulations.
Packagings that cannot be cleansed are to be disposed of in the same manner as the product.

14 Transport information

- **DOT regulations:** Non-hazardous via all transport modes.
- **Hazard class:** -
Non-Hazardous
- **Land transport ADR/RID (cross-border):**
- **ADR/RID class:** -
Not Regulated
- **Maritime transport IMDG:**
- **IMDG Class:** Not Regulated
- **Air transport ICAO-TI and IATA-DGR:**
- **ICAO/IATA Class:** Not Regulated
- **UN "Model Regulation":** -

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· **Environmental hazards:** Product contains environmentally hazardous substances: Epoxy Resin

· **Transport/Additional information:**

Epoxy Resin - This product is not considered to be DOT hazardous when transported via any mode within the United States. However, if this product is transported to or within the European Community it is considered to be an Environmentally Hazardous Substance, Liquid Epoxy Resin, UN3082, Class 9.

15 Regulations

· **Sara**

· **Section 355 (extremely hazardous substances):**

None of the ingredients is listed.

· **Section 313 (Specific toxic chemical listings):**

None of the ingredients is listed.

· **TSCA (Toxic Substances Control Act):**

All components of this product are on the TSCA Inventory or are exempt from TSCA Inventory requirements.

· **Proposition 65**

· **Chemicals known to cause cancer:**

14808-60-7 Quartz (SiO₂)

· **Chemicals known to cause reproductive toxicity:**

None of the ingredients is listed.

· **(DSL) Canada Domestic Substance List**

All components of this product are on the DSL (Canada Domestic Substance list) or are exempt from DSL requirements.

· **Carcinogen categories**

· **EPA (Environmental Protection Agency)**

None of the ingredients is listed.

· **IARC (International Agency for Research on Cancer)**

14808-60-7 Quartz (SiO₂)

I

· **NTP (National Toxicology Program)**

14808-60-7 Quartz (SiO₂)

K

· **TLV (Threshold Limit Value established by ACGIH)**

14808-60-7 Quartz (SiO₂)

A2

· **MAK (German Maximum Workplace Concentration)**

14808-60-7 Quartz (SiO₂)

I

· **NIOSH-Ca (National Institute for Occupational Safety and Health)**

14808-60-7 Quartz (SiO₂)

· **OSHA-Ca (Occupational Safety & Health Administration)**

None of the ingredients is listed.

· **Product related hazard informations:**

The product has been classified and marked in accordance with directives on hazardous materials.

· **Hazard-determining components of labelling:**

Epoxy Resin
Trade Secret

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· **Risk phrases:**

Irritating to eyes and skin.

May cause sensitisation by skin contact.

Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

· **Special labeling of certain preparations:**

Contains epoxy constituents. See information supplied by the manufacturer.

· **National regulations:**

· **Water hazard class:** Water hazard class 2 (Self-assessment): hazardous for water.

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16 Other information

Although the information and recommendations set forth in this MSDS are presented in good faith and are believed to be correct as of the date of this MSDS, Royal Adhesives & Sealants makes no representations as to the completeness or accuracy thereof. Information is supplied on the condition that the persons receiving and using it will make their own determination as to the suitability for their purpose prior to use. In no event will Royal Adhesives & Sealants or any affiliate thereof be responsible for damages of any nature whatsoever resulting from the use or reliance on the information set forth in the MSDS.

· **Department issuing MSDS:** Environment protection department.

· **Abbreviations and acronyms:**

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)

RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)

DOT: US Department of Transportation

GHS: Globally Harmonized System of Classification and Labelling of Chemicals

ACGIH: American Conference of Governmental Industrial Hygienists

NFPA: National Fire Protection Association (USA)

HMIS: Hazardous Materials Identification System (USA)

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






Reviewed on 11/06/2009

1 Identification of substance

- **Product details**
- **Trade name:** 50114 (Hardman Epocure 114 Part B)
- **Article number:** 50114
- **Manufacturer/Supplier:**
Royal Adhesives And Sealants, LLC
2001 W. Washington Street
South Bend IN 46628-2023
- **Information department:** Environment protection department.
- **Emergency information:** ChemTrec: UNITED STATES 1(800)424-9300 INTERNATIONAL 202-483-7616

2 Composition/Data on components

- **Chemical characterization**
- **Description:** Mixture of the substances listed below with nonhazardous and Trade Secret addition(s).
- **Dangerous components:**
For Trade Secret information refer to 29 CFR 1910.120.

	Amidoamine	Danger:  3.2/1C	50-100%
	Aliphatic Amine	Danger:  3.2/1B Warning:  3.1.O/4, 3.1.D/4, 3.4.S/1  4.1.C/2	2.5-10%
80-05-7	4,4'-isopropylidenediphenol	Danger:  3.3/1 Warning:  3.7/2;  3.4.S/1, 3.8/3	2.5-10%
111-40-0	Diethylenetriamine (DETA)	Danger:  3.2/1B Warning:  3.1.O/4, 3.1.D/4, 3.4.S/1	2.5-10%

- **Additional information:** For the wording of the listed risk phrases refer to section 15.

3 Hazards identification

- **Hazard description:**
Corrosive
- **Information pertaining to particular dangers for man and environment:**
Causes burns.
May cause sensitisation by skin contact.
Possible risk of impaired fertility.
Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
- **Classification system:**
The classification was made according to the latest editions of international substances lists, and expanded upon from company and literature data.
- **NFPA ratings (scale 0 - 4)**



Health = 3
Fire = 1
Reactivity = 0

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· HMIS-ratings (scale 0 - 4)

HEALTH	*3	Health = *3
FIRE	1	Fire = 1
PHYSICAL HAZARD	0	Physical Hazard = 0

· GHS label elements

Corrosion **Danger**

3.2/1B - Causes severe skin burns and eye damage.

Health hazard **Warning**

3.7/2 - Suspected of damaging fertility or the unborn child.

Exclamation mark **Warning**

3.4/1 - May cause an allergic skin reaction.

Warning

3.1/5 - May be harmful if swallowed.

4.1/3 - Harmful to aquatic life with long lasting effects.

· Prevention:

Do not breathe dust/fume/gas/mist/vapours/spray.

· Response:

IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

Immediately call a POISON CENTER or doctor/physician.

· Storage:

Store locked up.

· Disposal:

Dispose of contents/container in accordance with local/regional/national/international regulations.

4 First aid measures

· **General information:** Immediately remove any clothing soiled by the product.

· After inhalation:

Remove to fresh air. If not breathing, administer artificial respiration. If breathing is difficult, oxygen should be administered by qualified personnel. Call a physician or transport to a medical facility.

Call a doctor immediately.

· **After skin contact:** Immediately wash with water and soap and rinse thoroughly.

· After eye contact:

Rinse opened eye for 15 minutes under running water. If eye becomes irritated, obtain medical treatment.

· After swallowing:

Drink copious amounts of water and provide fresh air. Immediately call a doctor.

Seek medical treatment.

5 Fire fighting measures

· Suitable extinguishing agents:

CO2, extinguishing powder or water spray. Fight larger fires with water spray.

Use fire fighting measures that suit the environment.

· **Protective equipment:** Protective clothing and respiratory protective device.

6 Accidental release measures

· **Person-related safety precautions:** Wear protective equipment. Keep unprotected persons away.

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- **Measures for environmental protection:** Do not allow to enter sewers/ surface or ground water.
- **Measures for cleaning/collecting:**
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
Dispose of contaminated material as waste in accordance with federal state and local regulations.
Ensure adequate ventilation.

7 Handling and storage

- **Handling:**
- **Information for safe handling:** Ensure good ventilation/exhaustion at the workplace.
- **Information about protection against explosions and fires:** No special measures required.
- **Storage:**
- **Requirements to be met by storerooms and receptacles:** Store in a cool location away from direct heat.
- **Information about storage in one common storage facility:** Keep away from open flames and high temperatures.
- **Further information about storage conditions:** Store in cool, dry conditions in well sealed receptacles.

8 Exposure controls and personal protection

- **Additional information about design of technical systems:** No further data.

- **Components with limit values that require monitoring at the workplace:**

Aliphatic Amine (2.5-10%)

WEEL	5 mg/m ³
	Skin; DSEN

111-40-0 Diethylenetriamine (DETA) (2.5-10%)

REL	4 mg/m ³ , 1 ppm
	Skin
TLV	4.2 mg/m ³ , 1 ppm
	Skin

- **Additional information:** The lists that were valid during the creation were used as basis.
- **Personal protective equipment (see listings below)**
- **General protective and hygienic measures:**
Keep away from foodstuffs, beverages and feed.
Immediately remove all soiled and contaminated clothing.
Wash hands before breaks and at the end of work.
Avoid contact with the eyes and skin.
- **Breathing equipment:**
In the absence of adequate ventilation, use NIOSH-certified respiratory protection when chemical exposure is excessive or above an established exposure limit. Comply with OSHA 29 CFR 1910.134.
- **Protection of hands:**
Protective gloves
The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.
- **Material of gloves**
Nitrile rubber, NBR
Chloroprene rubber, CR
- **Eye protection:**
Safety glasses with side shields.

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Tightly sealed goggles

· **Body protection:**

Emergency showers and eye wash stations should be available.

Protective work clothing

9 Physical and chemical properties

· **General Information**

Form: Liquid
Color: Amber
Odor: Amine-like

· **Change in condition**

Melting point: Undetermined.
Boiling point: Undetermined.

· **Flash point:** > 96°C (> 205°F)

· **Ignition temperature:** 325°C (617°F)

· **Auto igniting:** Product is not selfigniting.

· **Danger of explosion:** Product does not present an explosion hazard.

· **Specific gravity at 20°C (68°F):** 0.98 g/cm³

· **Solubility in / Miscibility with**

Water: Not miscible or difficult to mix.

· **Solvent content:**

Organic solvents: 0.0 %
VOC (Per EPA 24) N/A GMS/L

Solids content: 15.0 %

10 Stability and reactivity

· **Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.

· **Materials to be avoided:**

· **Dangerous reactions** Strong oxidizing agents.

· **Dangerous products of decomposition:** Carbon Monoxide, Carbon Dioxide, Nitrogen Oxides, Ammonia.

11 Toxicological information

· **Acute toxicity:**

· **LD/LC50 values that are relevant for classification:**

Aliphatic Amine

Dermal LD50 660 mg/kg (rabbit)

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80-05-7 4,4'-isopropylidenediphenol

Oral LD50 3250 mg/kg (rat)

Dermal LD50 3000 mg/kg (rabbit)

111-40-0 Diethylenetriamine (DETA)

Oral LD50 1080 mg/kg (rat)

Dermal LD50 1090 mg/kg (rabbit)

· **Primary irritant effect:**· **on the skin:**

May be severely irritating to the skin.

May be toxic if absorbed.

· **on the eye:**

May be severely irritating to the eyes.

Vapors may be irritating to the eyes.

· **Sensitization:** Skin Contact - Sensitization possible through skin contact.· **Additional toxicological information:**

Ingestion - May cause severe irritation to mouth, throat and stomach.

Ingestion - May be toxic by ingestion.

Inhalation - Vapors may be severely irritating to the respiratory tract.

Preexisting eye, skin and respiratory disorders may be aggravated by exposure to this product.

The product shows the following dangers according to internally approved calculation methods for preparations:

Corrosive

Irritant

Swallowing will lead to a strong caustic effect on mouth and throat and to the danger of perforation of esophagus and stomach.

12 Ecological information· **Ecotoxic effects:**· **Remark:** Harmful to fish· **Additional ecological information:**· **General notes:**

Water hazard class 2 (Self-assessment): hazardous for water

Do not allow product to reach ground water, water course or sewage system.

Must not reach bodies of water or drainage ditch undiluted or unneutralized.

Danger to drinking water if even small quantities leak into the ground.

Harmful to aquatic organisms

13 Disposal considerations· **Product:**· **Recommendation:**

Disposal must be made according Federal, State and local regulations.

Must not be disposed of together with household garbage. Do not allow product to reach sewage system.

· **Uncleaned packagings:**· **Recommendation:**

Disposal must be made according to official regulations.

Packagings that cannot be cleansed are to be disposed of in the same manner as the product.

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14 Transport information

· DOT regulations:



- Hazard class: 8
- Identification number: UN1760
- Packing group: III
- Proper shipping name (technical name): CORROSIVE LIQUID, N.O.S. (Amidoamine, DIETHYLENETRIAMINE)
- Label: 8

· Land transport ADR/RID (cross-border):



- ADR/RID class: 8 Corrosive substances
- Danger code (Kemler): 80
- UN-Number: 1760
- Packaging group: III
- Description of goods: 1760 CORROSIVE LIQUID, N.O.S. (Amidoamine, DIETHYLENETRIAMINE)

· Maritime transport IMDG:



- IMDG Class: 8
- UN Number: 1760
- Label: 8
- Packaging group: III
- EMS Number: F-A,S-B
- Proper shipping name: CORROSIVE LIQUID, N.O.S. (Amidoamine, DIETHYLENETRIAMINE)

· Air transport ICAO-TI and IATA-DGR:



- ICAO/IATA Class: 8
- UN/ID Number: 1760
- Label: 8
- Packaging group: III
- Proper shipping name: CORROSIVE LIQUID, N.O.S. (Amidoamine, DIETHYLENETRIAMINE)

- UN "Model Regulation": UN1760, CORROSIVE LIQUID, N.O.S., 8, III

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15 Regulations

· Sara

· Section 355 (extremely hazardous substances):

None of the ingredients is listed.

· Section 313 (Specific toxic chemical listings):

80-05-7 | 4,4'-isopropylidenediphenol

· TSCA (Toxic Substances Control Act):

All components of this product are on the TSCA Inventory or are exempt from TSCA Inventory requirements.

· Proposition 65

· Chemicals known to cause cancer:

None of the ingredients is listed.

· Chemicals known to cause reproductive toxicity:

None of the ingredients is listed.

· (DSL) Canada Domestic Substance List

All components of this product are on the DSL(Canada Domestic Substance list) or are exempt from DSL requirements.

· Cancerogenity categories

· EPA (Environmental Protection Agency)

None of the ingredients is listed.

· IARC (International Agency for Research on Cancer)

None of the ingredients listed.

· NTP (National Toxicology Program)

None of the ingredients is listed.

· TLV (Threshold Limit Value established by ACGIH)

None of the ingredients listed.

· MAK (German Maximum Workplace Concentration)

None of the ingredients is listed.

· NIOSH-Ca (National Institute for Occupational Safety and Health)

None of the ingredients is listed.

· OSHA-Ca (Occupational Safety & Health Administration)

None of the ingredients is listed.

· Product related hazard informations:

The product has been classified and marked in accordance with directives on hazardous materials.

· Hazard-determining components of labelling:

Aliphatic Amine

4,4'-isopropylidenediphenol

Diethylenetriamine (DETA)

· Risk phrases:

Causes burns.

May cause sensitisation by skin contact.

Possible risk of impaired fertility.

Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

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Revision Number 2

Reviewed on 11/06/2009

Trade name: 50114 (Hardman Epocure 114 Part B)

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- **National regulations:**
- **Water hazard class:** Water hazard class 2 (Self-assessment): hazardous for water.

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16 Other information

Although the information and recommendations set forth in this MSDS are presented in good faith and are believed to be correct as of the date of this MSDS, Royal Adhesives & Sealants makes no representations as to the completeness or accuracy thereof. Information is supplied on the condition that the persons receiving and using it will make their own determination as to the suitability for their purpose prior to use. In no event will Royal Adhesives & Sealants or any affiliate thereof be responsible for damages of any nature whatsoever resulting from the use or reliance on the information set forth in the MSDS.

- **Department issuing MSDS:** Environment protection department.

- **Abbreviations and acronyms:**

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)

RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)

IMDG: International Maritime Code for Dangerous Goods

DOT: US Department of Transportation

IATA: International Air Transport Association

IATA-DGR: Dangerous Goods Regulations by the "International Air Transport Association" (IATA)

ICAO: International Civil Aviation Organization

ICAO-TI: Technical Instructions by the "International Civil Aviation Organization" (ICAO)

GHS: Globally Harmonized System of Classification and Labelling of Chemicals

ACGIH: American Conference of Governmental Industrial Hygienists

NFPA: National Fire Protection Association (USA)

HMIS: Hazardous Materials Identification System (USA)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

USA