

* **1 Identification of the substance/mixture and of the company/undertaking**

- **Product identifier**
- **Trade name:** *55137 (Hardman Epocap 25137 Part B)*
- **Article number:** *55137*
- **CAS Number:**
112-24-3
- **EC number:**
203-950-6
- **Index number:**
612-059-00-5
- **Relevant identified uses of the substance or mixture and uses advised against** *Activator*
- **Application of the substance / the preparation** *Activator*

- **Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:**
Royal Adhesives And Sealants, LLC
2001 W. Washington Street
South Bend IN 46628-2023

- **Information department:** *Environment protection department.*
- **Emergency telephone number:** *ChemTrec: UNITED STATES 1(800)424-9300 INTERNATIONAL 703-527-3887*

* **2 Hazards identification**

- **Classification of the substance or mixture**
Acute Tox. 3 H311 Toxic in contact with skin.
Skin Corr. 1B H314 Causes severe skin burns and eye damage.
Skin Sens. 1 H317 May cause an allergic skin reaction.
.....
Acute Tox. 5 H303 May be harmful if swallowed.

- **Classification according to Directive 67/548/EEC or Directive 1999/45/EC**
Corrosive
Causes burns.
.....
Harmful
Harmful in contact with skin.
.....
Irritant
May cause sensitisation by skin contact.
.....
Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
- **Information concerning particular hazards for human and environment:** *Not applicable.*

- **Label elements**
- **Labelling according to EU guidelines:**
Observe the general safety regulations when handling chemicals.
The product has been classified and marked in accordance with directives on hazardous materials.
- **Code letter and hazard designation of product:**
Corrosive
- **Risk phrases:**
Harmful in contact with skin.
Causes burns.
May cause sensitisation by skin contact.
Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

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- **Safety phrases:**

Keep locked up and out of the reach of children.

In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

Do not empty into drains, dispose of this material and its container at hazardous or special waste collection point.

Wear suitable protective clothing, gloves and eye/face protection.

In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

- **Classification system:**

- **NFPA ratings (scale 0 - 4)**

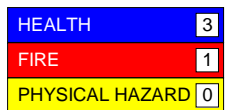


Health = 3

Fire = 1

Reactivity = 0

- **HMIS-ratings (scale 0 - 4)**



HEALTH 3 Health = 3

FIRE 1 Fire = 1

PHYSICAL HAZARD 0 Physical Hazard = 0

- **Other hazards**

- **Results of PBT and vPvB assessment**

- **PBT:** Not applicable.

- **vPvB:** Not applicable.

3 Composition/information on ingredients

- **Chemical characterization: Substances**

- **CAS No. Description**

112-24-3 Triethylenetetramine

- **Identification number(s) N/A**

- **EC number:** 203-950-6

- **Index number:** 612-059-00-5

- **Description:** Mixture: consisting of the following components.

- **Dangerous components:**

Aliphatic Amine

⚠ Skin Corr. 1B, H314; ⚠ Acute Tox. 4, H302; Acute Tox. 4, H312; Skin Sens. 1, H317

≤2.5%

4 First aid measures

- **Description of first aid measures**

- **After inhalation:**

Supply fresh air or oxygen; call for doctor.

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

- **After skin contact:**

Immediately wash with water and soap and rinse thoroughly.

Seek medical treatment.

- **After swallowing:** Do not induce vomiting; immediately call for medical help.

- **Information for doctor:**

- **Most important symptoms and effects, both acute and delayed** No further relevant information available.

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- **Indication of any immediate medical attention and special treatment needed**
No further relevant information available.

* 5 Firefighting measures

- **Extinguishing media**
- **Suitable extinguishing agents:**
CO₂, extinguishing powder or water spray. Fight larger fires with water spray.
Use fire fighting measures that suit the environment.
- **Advice for firefighters** Use water spray in a fire condition.
- **Protective equipment:** Mouth respiratory protective device.

* 6 Accidental release measures

- **Personal precautions, protective equipment and emergency procedures**
Wear protective equipment. Keep unprotected persons away.
Ensure adequate ventilation
- **Environmental precautions:** Do not allow to enter sewers/ surface or ground water.
- **Methods and material for containment and cleaning up:**
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.
- **Reference to other sections**
See Section 7 for information on safe handling.
See Section 8 for information on personal protection equipment.
See Section 13 for disposal information.

* 7 Handling and storage

- **Handling:**
- **Precautions for safe handling**
Ensure good ventilation/exhaustion at the workplace.
Prevent formation of aerosols.
- **Information about protection against explosions and fires:** No special measures required.
- **Conditions for safe storage, including any incompatibilities**
- **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:** Store away from oxidizing agents.
- **Further information about storage conditions:** Keep receptacle tightly sealed.
- **Specific end use(s)** No further relevant information available.

* 8 Exposure controls/personal protection

- **Control parameters**
- **Components with limit values that require monitoring at the workplace:** Not required.
- **Additional information:** The lists that were valid during the creation were used as basis.
- **Exposure controls**
- **Personal protective equipment (see listings below)**
- **General protective and hygienic measures:**
Keep away from foodstuffs, beverages and feed.

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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:** *Use suitable respiratory protective device in case of insufficient ventilation.*

· **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

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer.

· **Penetration time of glove material**

The exact break trough time has to be found out by the manufacturer of the protective gloves and has to be observed.

· **Eye protection:**

Safety glasses with side shields.



Tightly sealed goggles

· **Body protection:** *Protective work clothing*

9 Physical and chemical properties

· **Information on basic physical and chemical properties**

· **General Information**

· **Appearance:**

Form: *Liquid*

Color: *Light*

· **Odor:** *Amine-like*

· **Odour threshold:** *Not determined.*

· **pH-value:** *Not determined.*

· **Change in condition**

Melting point: *12°C (54 °F)*

Boiling point: *Undetermined.*

· **Flash point:** *135°C (275 °F)*

· **Flammability (solid, gaseous):** *Not applicable.*

· **Ignition temperature:** *335°C (635 °F)*

· **Decomposition temperature:** *Not determined.*

· **Auto igniting:** *Not determined.*

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

· **Flammable limits:**

Lower: *Not determined.*

Upper: *Not determined.*

· **Vapor pressure at 20°C (68 °F):** *0.01 hPa*

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- | | |
|---|--|
| · Specific gravity at 20°C (68 °F): | 0.98236 g/cm ³ (8.198 lbs/gal) |
| · Relative density | Not determined. |
| · Vapour density | Not determined. |
| · Evaporation rate | Not determined. |
| · Solubility in / Miscibility with Water: | |
| | Not miscible or difficult to mix. |
| · Segregation coefficient (n-octanol/water): Not determined. | |
| · Viscosity: | |
| Dynamic: | Not determined. |
| Kinematic: | Not determined. |
| · Solvent content: | |
| Organic solvents: | 0.0 % |
| VOC (Per EPA 24) | Not Available GMS/L |
| · Other information | No further relevant information available. |

* 10 Stability and reactivity

- **Reactivity**
- **Chemical stability**
- **Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.
- **Possibility of hazardous reactions** No dangerous reactions known.
- **Conditions to avoid** No further relevant information available.
- **Incompatible materials:** Reacts with oxidizing agents.
- **Hazardous decomposition products:** Carbon monoxide and carbon dioxide

* 11 Toxicological information

- **Information on toxicological effects**
- **Acute toxicity:**

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

112-24-3 Triethylenetetramine

Oral	LD50	2500 mg/kg (rat)
Dermal	LD50	805 mg/kg (rabbit)

Aliphatic Amine

Dermal	LD50	660 mg/kg (rabbit)
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- **Primary irritant effect:**
- **on the skin:** Caustic effect on skin and mucous membranes.
- **on the eye:** Strong irritant with the danger of severe eye injury.
- **Sensitization:** Skin Contact - Sensitization possible through skin contact.
- **Additional toxicological information:**

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

Harmful

Corrosive

Irritant

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

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- **Carcinogenic categories**

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

Substance is not listed.

- **NTP (National Toxicology Program)**

Substance is not listed.

12 Ecological information

- **Toxicity**

- **Aquatic toxicity:** No further relevant information available.

- **Persistence and degradability** No further relevant information available.

- **Behavior in environmental systems:**

- **Bioaccumulative potential** No further relevant information available.

- **Mobility in soil** No further relevant information available.

- **Ecotoxicological effects:**

- **Remark:** Harmful to fish

- **Additional ecological information:**

- **General notes:**

Water hazard class 2 (Assessment by list): 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.

Harmful to aquatic organisms

- **Results of PBT and vPvB assessment**

- **PBT:** Not applicable.

- **vPvB:** Not applicable.

- **Other adverse effects** No further relevant information available.

13 Disposal considerations

- **Waste treatment methods**

- **Recommendation:**

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

Must be specially treated adhering to official regulations.

- **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

- **UN-Number**

- **DOT** UN2259

- **ADR, IMDG, IATA** 2259

- **UN proper shipping name**

- **ADR** 2259 TRIETHYLENETETRAMINE

- **IMDG, IATA** TRIETHYLENETETRAMINE

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· **Transport hazard class(es)**· **DOT**· **Class**

8 Corrosive substances.

· **Label**

8

This product meets the criteria

· **ADR, IMDG, IATA**· **Class**

8 Corrosive substances

· **Label**

8

· **Packing group**· **DOT, ADR, IMDG, IATA**

II

· **Special precautions for user**

Warning: Corrosive substances

· **EMS Number:**

F-A,S-B

· **Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code**

Not applicable.

· **UN "Model Regulation":**

UN2259, TRIETHYLENETETRAMINE, 8, II

15 Regulatory information

· **Safety, health and environmental regulations/legislation specific for the substance or mixture**· **Sara**· **Section 355 (extremely hazardous substances):**

Substance is not listed.

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

Substance is not listed.

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

Substance is listed.

· **Proposition 65**· **Chemicals known to cause cancer:**

Substance is not listed.

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

Substance is not 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.

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· **Cancerogenity categories**

· **EPA (Environmental Protection Agency)**

Substance is not listed.

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

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

Substance is not listed.

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

Substance is not listed.

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

Substance is not listed.

· **Product related hazard informations:**

Observe the general safety regulations when handling chemicals.

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

· **Risk phrases:**

Harmful in contact with skin.

Causes burns.

May cause sensitisation by skin contact.

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

· **National regulations:**

· **Water hazard class:** Water hazard class 2 (Assessment by list): hazardous for water.

· **Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

* 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:**

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

ICAO: International Civil Aviation Organization

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

IMDG: International Maritime Code for Dangerous Goods

DOT: US Department of Transportation

IATA: International Air Transport Association

ACGIH: American Conference of Governmental Industrial Hygienists

EINECS: European Inventory of Existing Commercial Chemical Substances

CAS: Chemical Abstracts Service (division of the American Chemical Society)

NFPA: National Fire Protection Association (USA)

HMIS: Hazardous Materials Identification System (USA)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent