



# Material Safety Data Sheet

DATE: 6/4/2013

## 1. PRODUCT AND COMPANY IDENTIFICATION

|                                      |   |
|--------------------------------------|---|
| Product Name                         | PROTAL 7000 PART B HARDENER   |
| Product Use Description              | Curing Agent Epoxy  |
| Manufacturer / Importer/ Distributor | Denso North America<br>9747 Whithorn Drive<br>Houston, Texas 77095<br>281-821-3355 (Office)<br>281-821-0304 (Fax) |
| Telephone                            | 1-281-821-3355 Corporate<br>1-888-821-2300 Toll Free Number   |
| Emergency Telephone Number (24Hour)  | 1-801-629-0667  |

## 2. HAZARDS IDENTIFICATION

### Emergency Overview

#### **WARNING!**

Corrosive. Irritant.  
Toxic in contact with skin.  
Harmful if inhaled or swallowed.  
Severe respiratory irritant.  
Severe skin irritant.  
Severe eye irritant.  
May cause sensitization by skin contact.  
This product is hazardous according to OSHA 29 CFR 1910.1200.

### Potential Health Effects

#### Inhalation

Can cause severe eye, skin and respiratory tract burns. May cause nose, throat, and lung irritation. Inhalation of vapors and / or aerosols in high concentration may cause irritation of respiratory system.

#### Ingestion

Harmful, if swallowed. If ingested, may cause severe burns of the mouth and throat, as well as a danger of perforation of the esophagus and the stomach.

#### Eye contact

Causes eye burns. May cause blindness. Severe eye irritation.

#### Skin contact

Toxic in contact with skin. Causes skin burns.

#### Target Organs

Skin. Eyes. Respiratory system. Gastrointestinal tract.

### Chronic Health Hazard

This product contains no listed carcinogens according to IARC, ACGIH, NTP and / or OSHA in concentrations of 0.1 percent or greater. Prolonged contact may result in chemical burns and permanent damage. Repeated or prolonged contact causes sensitization, asthma and eczemas.

### Potential Environmental Effects

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

### Aggravated Medical Condition

Eye disease, Skin disorders and Allergies. Asthma.

See section 11 for more detailed toxicological information

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## 3. COMPOSITION / INFORMATION ON INGREDIENTS

| Components                  | CAS Number | Concentration |
|-----------------------------|------------|---------------|
| 1-(2-Aminoethyl) Piperazine | 140-31-8   | 30-60%        |
| Modified Epoxy Resin        | 9072-62-2  | 10-30%        |
| Polyamide Resin             | 68410-23-1 | 10-30%        |
| Bisphenol-A                 | 80-05-7    | 10-30%        |
| Nonyl Phenol                | 25154-52-3 | 7-13%         |
| Triethylenetetramine        | 112-24-3   | 5-10%         |
| Amino Silane                | 1760-24-3  | 5-10%         |
| Benzyltrimethylamine        | 103-83-3   | 1-5%          |

CHEMICAL FAMILY : Aliphatic Amine mixture.

Amounts specified are typical and do not represent a specification. Remaining components are proprietary, non-hazardous, and/or present at amounts below reportable limits.

## 4. FIRST AID MEASURES

|                |   |
|----------------|---|
| General advice | Seek medical advice. If breathing has stopped or is labored, give assisted respirations. Supplemental oxygen may be indicated. If the heart has stopped, trained personnel should begin cardiopulmonary resuscitation immediately.  |
| Eye contact    | Check for and remove any contact lenses. Hold eyelids apart, initiate and maintain gentle and continuous irrigation until the patient receives medical care. If medical care is not promptly available, continue to irrigate for one hour. Rinse immediately with plenty of water also under the eyelids for at least 20 minutes.   |
| Skin contact   | Immediately remove contaminated clothing, and any extraneous chemical, if possible to do so without delay. Initiate and maintain gentle and continuous irrigation until the patient receives medical care. If medical care is not promptly available, continue to irrigate for one hour. Cover wound with sterile dressing. Take off contaminated clothing and shoes immediately. NOTE TO PHYSICIANS: Application of corticosteroid cream has been effective in treating skin irritation. |
| Ingestion      | Never give anything by mouth to an unconscious person. If a person vomits when lying on his back, place him in the recovery position. Prevent aspiration of vomit. Turn victim's head to the side.  |
| Inhalation     | If breathing has stopped or is labored, give assisted respirations. Supplemental oxygen may be indicated. If the heart has stopped, trained personnel should begin cardiopulmonary resuscitation immediately. Move to fresh air.  |

## 5. FIRE-FIGHTING MEASURES

|  |  |
|--|--|
| Suitable extinguishing media                   | Alcohol-resistant foam.<br>Carbon dioxide (CO <sub>2</sub> )<br>Dry chemical. Dry sand. Limestone powder.  |
| Hazardous Combustion Products                  | May generate ammonia gas. May generate toxic nitrogen oxide gases. Use of water may result in the formation of very toxic aqueous solutions. Do not allow run-off from fire fighting to enter drains or water courses. Incomplete combustion may form carbon monoxide. Downwind personnel must be evacuated. Burning produces noxious and toxic fumes. |
| Special protective equipment for fire-fighters | Avoid contact with the skin. A face shield should be worn. Use personal protective equipment. Wear self contained breathing apparatus for fire fighting if necessary.  |
| Further information                            | Do not allow run-off from fire fighting to enter drains or water courses.  |

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## 6. ACCIDENTAL RELEASE MEASURES

|                           |  |
|---------------------------|--|
| Personal precautions      | Use self-contained breathing apparatus and chemically protective clothing. Wear suitable protective clothing, gloves and eye/face protection. Evacuate personnel to safe areas. See Section 8 for Personal Protective Equipment. |
| Environmental precautions | Construct a dike to prevent spreading. Avoid discharge into drains, water courses, or onto the ground.   |
| Methods for cleaning up   | Approach suspected leak areas with caution. Contact Denso's Emergency Response Center (see Section 1) for advice. Cover with inert, absorbent material and place in appropriate waste container for disposal.                    |
| Additional advice         | If possible, stop flow of product. Clean up in accordance with all applicable regulations.   |

## 7. HANDLING AND STORAGE

|                       |  |
|-----------------------|--|
| Handling              | Avoid contact with skin and eyes. Emergency showers and eye wash situations should be readily accessible. Adhere to work practice rules established by government regulations. Avoid vapors and/or aerosols. Avoid contact with eyes. Use only in well-ventilated areas. Use personal protective equipment. When using, do not eat drink or smoke. Change contaminated clothing. |
| Storage               | Store in steel containers preferably located outdoors, above ground, and surrounded by dikes to contain spills or leaks. Keep containers tightly closed in dry, cool and well-ventilated place. Do not store near incompatible materials (See Section 10).   |
| Technical Precautions | Do not store in reactive metal containers.   |

## 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

|                                 |  |
|---------------------------------|--|
| Recommended Monitoring          | Consult with local authorities for acceptable exposure limits.   |
| Engineering measures            | Provide readily accessible eye wash stations and safety showers.<br>Provide natural or explosion-proof ventilation adequate to ensure concentrations are kept below exposure limits.   |
| Personal Protective Equipment   |  |
| Hand Protection                 | Wear impervious gloves to prevent any possibility of skin contact. The breakthrough time of the selected glove(s) must be greater than the intended use period. Frequent glove changes are recommended.  |
| Eye Protection                  | Wear approved safety glasses or goggles to prevent any possibility of eye contact. Wear a full-face shield as well when appropriate.   |
| Skin and Body Protection        | Wear impervious clothing and footwear to prevent any possibility of skin contact. The breakthrough time of the selected clothing and footwear must be greater than the intended use period. Change contaminated clothing and footwear immediately. |
| Respiratory Protection          | In case of inadequate ventilation, use suitable respiratory equipment with a filter for organic vapors. Change filters regularly.  |
| Environmental Exposure controls | Construct a dike or other barrier to prevent spreading.  |



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Special Instructions for protection and hygiene

Discard contaminated leather articles. Remove contaminated clothing. Drench affected area with water for at least 15 minutes. Provide readily accessible eye wash stations and safety showers. Wash at the end of each work shift and before eating, smoking or using the toilet. Provide readily accessible eye wash stations and safety showers.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

|                        |                    |                           |                        |
|------------------------|--------------------|---------------------------|------------------------|
| Form                   | Viscous Liquid.    | Auto-ignition temperature | N/A                    |
| Color                  | Yellow.            | Odor threshold            | N/A                    |
| Odor                   | Irritating. Amine. | Evaporation rate          | N/A                    |
| Flammable limits       | N/A                | Viscosity                 | 7,000 cP @ 73oF (22oC) |
| Relative vapor density | Heavier than air.  | pH                        | 12                     |
| Relative Density       | 1.04               | Boiling point/range       | N/A                    |
| Vapor Pressure         | N/A                | Flash point               | N/A                    |
| Density at 70°F (21°C) | 8.68 lbs/gal       | Water solubility          | Slight                 |

## 10. STABILITY AND REACTIVITY

|                                  |   |
|----------------------------------|---|
| Stability                        | Stable under normal conditions.   |
| Materials to avoid               | Strong oxidizing agents.<br>Strong acids.<br>Reactive organometallic compounds.<br>Product slowly corrodes copper, aluminum, zinc and galvanized surfaces.<br>Reaction with peroxides may result in violent decomposition of peroxide possibly creating an explosion. |
| Other hazards                    | Reacts with considerable heat release with some epoxy resins.   |
| Hazardous decomposition products | Decomposition products may include the following materials:<br>Nitric acid.<br>Ammonia.<br>Nitrogen oxides (NOx).<br>Nitrogen oxide can react with water vapors to form corrosive nitric acid.<br>Carbon monoxide.<br>Carbon dioxide.                                 |

## 11. TOXICOLOGICAL INFORMATION

### Toxicological Data

| Acute toxicity ingredient name | CAS #      | LD50 Oral - Rat mg/kg | LD50 Dermal - Rabbit mg/kg |
|--------------------------------|------------|-----------------------|----------------------------|
| 1-(2-Aminoethyl) piperazine    | 140-31-8   | 2,108                 | 866                        |
| Triethylenetetramine           | 112-24-3   | 2,500                 | 805                        |
| Benzyl dimethylamine           | 103-83-3   | 265                   | 1,660                      |
| Nonyl Phenol                   | 25154-52-3 | 1,412                 | 2,031                      |

Acute Health Hazards  
Epidemiology

Pre-existing skin and respiratory conditions including dermatitis, asthma and chronic lung disease might be aggravated by exposure.



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|                                  |   |
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| Eye irritation/corrosion         | Severe eye irritation.  |
| Skin irritation/corrosion        | Severe skin irritation.   |
| Sensitization                    | May cause sensitization by skin contact.  |
| Respiratory irritation/corrosion | May cause irritation of respiratory tract.  |
| Ingestion                        | Ingestion may cause irritation and malaise.   |
| Chronic Health Hazards           | May cause damage to the liver and kidneys. No data is available regarding carcinogenicity, mutagenicity, or reproductive effects. |

## 12. ECOLOGICAL INFORMATION

|                               |  |
|-------------------------------|--|
| Ecotoxicity effects           |  |
| Aquatic toxicity              | No data is available on the product itself. Expected to be harmful to aquatic organisms. May cause long-term adverse effects in the aquatic environment. |
| Toxicity to other organisms   | No data available.   |
| Persistence and degradability |  |
| Biodegradability              | No data is available on the product itself.  |
| Mobility                      | No data available.   |
| Bioaccumulation               | No data is available on the product itself.  |

## 13. DISPOSAL CONSIDERATIONS

|                |   |
|----------------|---|
| Waste disposal | The generation of waste should be avoided or minimized wherever possible. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional and local authority requirements. Avoid disposal of spilled material and runoff and contact with soil, waterways, drains and sewers. Dispose of contaminated containers, soils, etc. in compliance with the requirements of environmental protection and waste disposal legislation and any regional and local authority requirements. This material and/or its container must be disposed of as hazardous waste. |
|----------------|---|

## 14. TRANSPORT INFORMATION

The data provided in this section is for information only and may not be specific to your package size or mode of transport. You will need to apply the appropriate regulations to properly classify your shipment for transportation. For complete transportation information, contact an Denso customer service representative.

| Regulatory Information | UN/ID No. | Proper shipping name  | Class or Division<br>Packing group | Reportable Quantities |
|------------------------|-----------|---|------------------------------------|-----------------------|
| CFR                    | UN2735    | AMINES, LIQUID, CORROSIVE, N.O.S.<br>(n-Aminoethylpiperazine) | Class 8, PG III                    | N/A                   |
| TDG                    | UN2735    | AMINES, LIQUID, CORROSIVE, N.O.S.<br>(n-Aminoethylpiperazine) | Class 8, PG III                    | N/A                   |
| IMO/IMDG               | UN2735    | AMINES, LIQUID, CORROSIVE, N.O.S.<br>(n-Aminoethylpiperazine) | Class 8, PG III                    | N/A                   |
| IATA                   | UN2735    | AMINES, LIQUID, CORROSIVE, N.O.S.<br>(n-Aminoethylpiperazine) | Class 8, PG III                    | N/A                   |



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## 15. REGULATORY INFORMATION

Toxic Substance Control Act (TSCA) 12(b) Component(s).

None.

OSHA Hazard Communication Standard (29 CFR 1910.1 200) Hazard Class(es)

Corrosive. Sensitizer.

| Country     | Regulatory List | Notification           |
|-------------|-----------------|------------------------|
| USA         | TSCA            | Included on Inventory. |
| Canada      | DSL             | Included on Inventory. |
| EU          | EINECS          | Included on Inventory. |
| Australia   | AICS            | Included on Inventory. |
| Japan       | ENCS            | Included on Inventory. |
| South Korea | ECL             | Included on Inventory. |
| China       | SEPA            | Included on Inventory. |
| Philippines | PICCS           | Included on Inventory. |

HCS Classification Corrosive material, Sensitizing material

EPA SARA Title III Section 312 (40 CFR 370) Hazard Classification

Acute Health Hazard

EPA SARA Title III Section 313 (40 CFR 372) Component(s) above 'de minimus' level

None.

EPA SARA Title III Section 302 Extremely Hazardous Substances

None.

US. California Safe Drinking Water & Toxic Enforcement Act (Proposition 65)

This product does not contain any chemicals known to State of California to cause cancer, birth defects or any other harm.

WHMIS Hazard

Classification (Canada) Class D-2B: Material causing other toxic effects (Toxic).

Canadian lists Canadian NPRI: None.

## 16. OTHER INFORMATION

HMIS<sup>®</sup>

|                 |   |
|-----------------|---|
| Health          | 3 |
| Flammability    | 1 |
| Physical hazard | 0 |

**Caution:** HMIS<sup>®</sup> 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<sup>®</sup> ratings are not required on MSDS's under 29 CFR 1910.1200, the preparer may choose to provide them. HMIS<sup>®</sup> ratings are to be used with a fully implemented HMIS<sup>®</sup> program. HMIS<sup>®</sup> is a registered mark of the National Paint & Coatings Association (NPCA). HMIS<sup>®</sup> materials may be purchased exclusively from J.J. Keller (800) 327-6868. The customer is responsible for determining the PPE code for this material.

Prepared by Denso EH & S Department

Telephone 1-281-821-3355 Corporate  
1-801-629-0667 Emergency (24 hour)

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## Notice to reader

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