

# Material Safety Data Sheet

DATE: 5/15/2013

## 1. PRODUCT AND COMPANY IDENTIFICATION

Product Name: PROTAL 7200 PART A RESIN

Product Use Description: Epoxy Resin

Manufacturer / Importer/ Distributor: Denso North America  
9747 Whithorn Drive  
Houston, Texas 77095  
281-821-3355 (Office)  
281-821-0304 (Fax)

Telephone: 1-281-821-3355 Corporate  
1-888-821-2300 Toll Free Number

Emergency Telephone Number (24Hour): 1-801-629-0667

## 2. HAZARDS IDENTIFICATION

### Emergency Overview

#### WARNING!

Irritant

Causes eye and skin irritation.

May cause allergic skin reaction

May cause respiratory tract irritation.

May cause abdominal pain, nausea, vomiting and diarrhea if swallowed.

Heated material can cause thermal burns.

May cause sensitization by skin contact.

### Potential Health Effects

#### Inhalation

Slightly irritating to the respiratory system.

#### Ingestion

Not expected to be harmful under normal conditions of use.

#### Eye contact

Irritating to eyes. Heated material can cause thermal burns.

#### Skin contact

Irritating to skin. May cause sensitization by skin contact.  
Heated material can cause thermal burns.

#### Chronic Health Hazard

Prolonged or repeated contact may irritate the skin, causing dermatitis.  
Not listed or regulated by IARC, NTP, OSHA, or ACGIH

### Exposure guidelines

#### Target Organs

Skin. Eyes. Respiratory system. Gastrointestinal tract.

#### Symptoms

Repeated and/or prolonged exposure may cause respiratory tract irritation and coughing, skin irritation and redness, eye pain or irritation and watering and redness.

### Potential environmental effects

No data is available.

### Aggravated Medical Condition

Pre-existing skin disorders may be aggravated by over-exposure to this product.

See section 11 for more detailed toxicological information.

## 3. COMPOSITION / INFORMATION ON INGREDIENTS

Components	CAS Number	Concentration
Epoxy Resin	25068-38-6	10-40%
Bisphenol-F Epoxy Resin	28064-14-4	10-40%
Aliphatic Glycidyl Ether	30499-70-8	3-20%

CHEMICAL FAMILY : Epoxy Resin 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.

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## 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	Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Get medical attention.
Skin contact	Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Wash contaminated clothing thoroughly with water before removing it, or wear gloves. Continue to rinse for at least 10 minutes. In the event of any complaints or symptoms, avoid further exposure. Wash clothing before reuse. Clean shoes thoroughly before reuse. For contact with hot product, flush contaminated skin with large amounts of cold water to dissipate heat. Cover with clean cotton sheeting or gauze. Get medical attention immediately.
Ingestion	Wash out mouth with water. Remove dentures if any. Move exposed person to fresh air. Keep person warm and at rest. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Get medical attention if adverse health effects persist or are severe. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.
Inhalation	Move exposed person to fresh air. Keep person warm and at rest. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention if adverse health effects persist or are severe. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

## 5. FIRE-FIGHTING MEASURES

Suitable extinguishing media	Alcohol-resistant foam. Carbon dioxide (CO <sub>2</sub> ) Dry chemical. Dry sand. Limestone powder.
Chronic Health Hazard	Decomposition products may include the following materials: carbon dioxides. Downwind personnel must be evacuated. Burning produces noxious and toxic fumes.
Special protective equipment for fire-fighters	Avoid contact with the skin. Fire-fighters should wear appropriate personal protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.
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	No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled materials. Avoid breathing vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment (see Section 8).
Environmental precautions	Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).
Methods for cleaning up	Move containers from spill area. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Use absorbent with inert material. Vacuum or sweep up material and place in a designated, labeled waste container. Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product. Note: see section 1 for emergency contact information and section 13 for waste disposal.
Additional advice	Stop leak if without risk.

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## 7. HANDLING AND STORAGE

Handling	Put on appropriate personal protective equipment (see section 8). Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking or smoking. Persons with a history of skin sensitization problems should not be employed in any process in which this product is used. Do not get in eyes or on skin or clothing. Do not breath vapor or mist. Do not ingest. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container.
Storage	Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.
Technical Precautions	Do not store in reactive metal containers.

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## 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Consult local authorities for accept exposure limits.	
Recommended monitoring procedures	If this product contains ingredients with exposure limits, personal workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment.
Engineering measures	Use only with adequate ventilation. If user operations generate dust, fumes, gas, vapor or mist, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits.
Hygiene measures	Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing or discard as necessary. Ensure that eyewash stations and safety showers are close to the workstation location.



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Respiratory Protection	Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicated this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.
Eye Protection	Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. This may include, but is not limited to, safety glasses, goggles and face shields.
Skin Protection	<p>Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product. This equipment may include, but is not limited to, impervious gloves, gauntlets, impervious shoes/boots, and protective clothing.</p> <p>The breakthrough time of the selected protective glove(s), shoes, and clothing must be greater than the intended use period.</p>
Environmental exposure controls	Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels. Environmental exposure controls may also include dikes or other liquid containment devices.

### 9. PHYSICAL AND CHEMICAL PROPERTIES

Form	Viscous Liquid.	Auto-ignition temperature	N/A
Color	White.	Odor threshold	N/A
Odor	Irritating.	Evaporation rate	N/A
Flammable Limits	N/A	Viscosity	255,000 cP @ 73oF (22oC)
Relative vapor density	N/A	pH	7
Relative Density	1.62	Boiling point/range	N/A
Vapor Pressure	N/A	Flash point	N/A
Density at 70°F (21°C)	101 lb/ft <sup>3</sup>	Water solubility	Slight

### 10. STABILITY AND REACTIVITY

Stability	The product is stable. Under normal conditions of storage and use, hazardous polymerization will not occur.
Conditions to avoid	Strong oxidizers
Materials to avoid	Reactive or incompatible with the following materials: Oxidizing materials Strong acids Strong alkalis
Other hazards	Reacts with considerable heat release with some curing agents.
Hazardous decomposition products	Decomposition products may include the following materials: Carbon oxides

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## 11. TOXICOLOGICAL INFORMATION

### Acute Health Hazard

Acute toxicity ingredient name	4,4'-Isopropylidenediphenol-epichlorohydrin copolymer		
LD50 Oral	Rat		30,000 mg/kg
LD50 Dermal	Rat		>1,200 mg/kg

Other toxicological information	Carcinogenicity	Classification
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Ingredient Name	
4,4'-isopropylidenediphenol-epichlorohydrin copolymer	
ACGIH	Not classified
IARC	Not classified
NTP	Not listed
OSHA	Not regulated
EU	Not classified

Eye irritation/corrosion	Irritating to the eye.
Skin irritation/corrosion	Irritating to skin.
Sensitization	May cause sensitization by skin contact.
Inhalation	Slightly irritating to respiratory tract.
Ingestion	Swallowing can cause abdominal irritation, nausea, vomiting & diarrhea.
Chronic Health Hazard	The product or a component may be mutagenic, the data is inconclusive.

## 12. ECOLOGICAL INFORMATION

### Ecotoxicity effects

Aquatic toxicity	No data is available on the product itself.
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.
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## 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 Packing group	Reportable Quantities
CFR	N/A	Non-regulated	N/A	N/A
TDG	N/A	Non-regulated	N/A	N/A
IMO/IMDG	N/A	Non-regulated	N/A	N/A
IATA	N/A	Non-regulated	N/A	N/A

## 15. REGULATORY INFORMATION

Toxic Substance Control Act (TSCA) 12(b) Components(s).  
None.

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

Country	Regulatory List	Notification
USA	TSCA 8b	All components listed or exempted.
Canada	DSL	All components listed or exempted.
EU	EINECS	All components listed or exempted.
Australia	AICS	All components listed or exempted.
Japan	ENCS	All components listed or exempted.
South Korea	KECI	All components listed or exempted.
China	IECSC	All components listed or exempted.
Philippines	PICCS	All components listed or exempted.

HCS Classification      Irritating material, Sensitizing material

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

State regulations      Massachusetts RTK Substances - None required.  
New Jersey RTK Substances - None required.  
Pennsylvania RTK Substances - None required.  
California Proposition 65 - WARNING: This product contains a chemical known to the State of California to cause cancer. Oxirane, (phenoxymethyl)- CAS 122-60-1

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

Canadian lists      Canadian NPRI: None required.



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## 16. OTHER INFORMATION

### HMIS<sup>®</sup>

Health	2
Flammability	1
Physical hazard	0
Chronic	

**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)
Date of Issue	15-May-13
Date of Printing	15-May-13
Version	1

### Notice to reader

The information provided herein was believed by Denso North America ("Denso") to be accurate at the time of preparation of prepared from sources believed to be reliable, but it is the responsibility of the user to investigate and understand other pertinent sources of information, to comply with all laws and procedures applicable to the safe handling and use of the product and to determine the suitability of the product for its intended use. All products supplied by Denso are subject to Denso's terms and conditions of sale. **DENSO MAKES NO WARRANTY, EXPRESS OR IMPLIED, CONCERNING THE PRODUCT OR THE MERCHANTABILITY OR FITNESS THEREOF FOR ANY PURPOSE OR CONCERNING THE ACCURACY OF ANY INFORMATION PROVIDED BY DENSO**, except that the product shall conform to Denso's specifications. Nothing contained herein constitutes an offer for the sale of any product.







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## 1. PRODUCT AND COMPANY IDENTIFICATION

Product Name	PROTAL 7200 PART B HARDENER
Product Use Description	Curing Agent Epoxy
Manufacturer / Importer/ Distributor	Denso North America 9747 Whithorn Drive Houston, Texas 77095 281-821-3355 (Office) 281-821-0304 (Fax)
Telephone	1-281-821-3355 Corporate 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	40-70%
Epoxy Novolac Resin	28064-14-4	10-30%
Nonyl Phenol	25154-52-3	2-20%
Bisphenol-A	60-05-7	3-10%
Epoxy Resin	25068-38-6	5-20%

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. Carbon dioxide (CO2) 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.

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## 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.

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## 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. 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	Green.	Odor threshold	N/A
Odor	Irritating. Amine.	Evaporation rate	N/A
Flammable limits	N/A	Viscosity	5,500 cP @ 73oF (22oC)
Relative vapor density	N/A	pH	>9
Relative Density	1.08	Boiling point/range	N/A
Vapor Pressure	N/A	Flash point	N/A
Density at 70°F (21°C)	67.4 lb/ft <sup>3</sup>	Water solubility	Slight

### 10. STABILITY AND REACTIVITY

Stability	Stable under normal conditions.
Materials to avoid	Strong oxidizing agents. Strong acids. Reactive organometallic compounds. Product slowly corrodes copper, aluminum, zinc and galvanized surfaces. 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: Nitric acid. Ammonia. Nitrogen oxides (NOx). Nitrogen oxide can react with water vapors to form corrosive nitric acid. Carbon monoxide. Carbon dioxide.

### 11. TOXICOLOGICAL INFORMATION

#### Toxicological Data

Acute toxicity		LD50 Oral - Rat	LD50 Dermal - Rabbit
ingredient name	CAS #	mg/kg	mg/kg
1-(2-Aminoethyl) piperazine	140-31-8	2,108	>800

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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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.
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## 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 Packing group	Reportable Quantities
CFR	UN2735	AMINES, LIQUID, CORROSIVE, N.O.S. (n-Aminoethylpiperazine)	Class 8, PG III	N/A
TDG	UN2735	AMINES, LIQUID, CORROSIVE, N.O.S. (n-Aminoethylpiperazine)	Class 8, PG III	N/A
IMO/IMDG	UN2735	AMINES, LIQUID, CORROSIVE, N.O.S. (n-Aminoethylpiperazine)	Class 8, PG III	N/A
IATA	UN2735	AMINES, LIQUID, CORROSIVE, N.O.S. (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®

Health	3
Flammability	1
Physical hazard	0

**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 MSDS's under 29 CFR 1910.1200, the preparer may choose to provide them. HMIS® ratings are to be used with a fully implemented HMIS® program. HMIS® is a registered mark of the National Paint & Coatings Association (NPCA). HMIS® 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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Version 1



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### Notice to reader

The information provided herein was believed by Denso North America ("Denso") to be accurate at the time of preparation of prepared from sources believed to be reliable, but it is the responsibility of the user to investigate and understand other pertinent sources of information, to comply with all laws and procedures applicable to the safe handling and use of the product and to determine the suitability of the product for its intended use. All products supplied by Denso are subject to Denso's terms and conditions of sale. **DENSO MAKES NO WARRANTY, EXPRESS OR IMPLIED, CONCERNING THE PRODUCT OR THE MERCHANTABILITY OR FITNESS THEREOF FOR ANY PURPOSE OR CONCERNING THE ACCURACY OF ANY INFORMATION PROVIDED BY DENSO**, except that the product shall conform to Denso's specifications. Nothing contained herein constitutes an offer for the sale of any product.

