



SAFETY DATA SHEET

According to 29 CFR 1910.1200(g)

PROTAL 7200 PART B (HARDENER)

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Product name Protal 7200 Part B (Hardener)

1.2. Relevant identified uses of the substance or mixture and uses advised against

Product Use Industrial use as a protective coating in prevention of corrosion.
Restricted Use Not intended for use by general public.

1.3. Details of the supplier of the safety data sheet

Company Denso North America
Address 9747 Whithorn Drive
Houston, TX 77095
Web www.densona.com
Telephone 1 (281) 821-3355
Fax 1 (281) 821-0304
Email info@densona.com

1.4. Emergency telephone number

Emergency telephone number (24 Hour) 1-801-629-0667

SECTION 2: Hazards Identification

2.1. Classification of the substance or mixture

2.1.1. Health Skin Irritation – Category 1
Eye Damage – Category 1
Skin Sensitizer – Category 1
STOT Repeat – Category 2 Inhalation, Ingestion, Contact (Liver, Lungs, Skin, Eyes)

2.1.2. Environmental Acute aquatic toxicity – Category 3

2.1.3. Physical None

2.2. Label elements

Hazard pictograms



Signal Word

Danger

Hazard statement

H302 – Harmful if swallowed.
H314 – Causes skin severe skin burns and eye damage.
H317 – May cause an allergic skin reaction.
H318 – Causes serious eye damage.
H335 – May cause respiratory irritation.
H373 – May cause damage to organs (Liver, Lungs, Skin, Eyes) through prolonged or



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**Precautionary Statement:
Prevention**

repeated exposure if inhaled, swallowed, contacted.
H411 – Toxic to aquatic life with long-lasting effects.

P102 – Keep out of reach of children.
P202 – Do not handle until all safety precautions have been read and understood
P233 – Keep container tightly closed.
P234 – Keep only in original container.
P235 – Store in a well ventilated place. Keep cool.
P261 – Avoid breathing dust/fume/gas/mist/vapors/spray.
P262 – Do not get in eyes, on skin, or on clothing.
P264 – Wash thoroughly after handling.
P270 – Do not eat, drink, or smoke when using this product.
P271 – Use only outdoors or in a well-ventilated area.
P272 – Contaminated work clothing should not be allowed out of the workplace.
P273 – Avoid release to the environment.
P280 – Wear protective gloves/protective clothing/eye protection/face protection.
P284 – In case of inadequate ventilation, wear respiratory protection.

**Precautionary Statement:
Response**

P301+P310 – IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician.
P302+P352 – IF ON SKIN: Wash with plenty of soap and water.
P303+P361+P353 – IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.
P304+P340 – IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P305+P351+P338 – IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P314 – Get medical advice / attention if you feel unwell.
P331 – Do not induce vomiting.
P333+P313 – If skin irritation or rash occurs: Get medical advice/attention.
P337+P313 – If eye irritation persists: Get medical advice/attention.
P363 – Wash contaminated clothing before reuse.
P391 – Collect spillage.

**Precautionary Statement:
Disposal**

P501 – Dispose of contents/container in accordance with local/regional/national/international regulations.

SECTION 3: Composition/information on ingredients

3.1. Substances

Chemical Name	CAS No.	Concentration (%w/w)	Classification
N-Aminoethylpiperazine	140-31-8	40-70%	Skin Irr 2; H315 Eye Irr 2; H319 Aqua Acute/Chronic 2; H411
4,4'-Isopropylidene-diphenol Reaction product: bisphenol-F- epichlorohydrin	80-05-7 28064-14-4	1-10% 5-20%	(1) (2) Skin Irr 2; H315 Eye Irr 2; H319 Skin Sens 1; H317



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Reaction product: bisphenol-A- (epichlorohydrin); epoxy resin (number average molecular weight < 700)	25068-38-6	5-20%	Aqua Chronic 2; H411 Xi; R36/38, 43 N; R51/53
4-Nonyl phenol, branched	84852-15-3	1-5%	Skin Irr 2; H315 Eye Irr 2; H319 Aqua Acute/Chronic 1; H411

NOTES: (1) Substance classified with a health or environmental hazard.
(2) Substance with a workplace exposure limit.

SECTION 4: First aid measures

4.1. 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.
4.2. Eye contact	Immediately flush eyes with plenty of water for at least 15 minute, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Get medical attention.
4.3. 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.
4.4. 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 exposure 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.
4.5 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,



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belt, or waistband.

4.6. Most important symptoms and effects, both acute and delayed

Eye contact	Corrosive to the eyes and may cause severe damage including blindness. Causes permanent eye injury. Symptoms may include discomfort or pain, excess blinking and tear production, with marked redness and swelling of the conjunctiva.
Skin contact	Corrosive. Contact may cause severe burns to skin. Symptoms may include redness, edema, drying, defatting and cracking of the skin. May cause allergic skin reaction or sensitization.
Ingestion	Harmful if swallowed. May produce burns to the lips, oral cavity, upper airway, esophagus and possibly the digestive tract. May cause abdominal pain, nausea, vomiting, or diarrhea.
Inhalation	High vapor concentrations are irritating to the eyes, nose, throat, and lungs. May cause irritation to respiratory system with throat discomfort, coughing or difficulty breathing.

SECTION 5: Firefighting measures

5.1. Suitable extinguishing media	Alcohol-resistant foam, Carbon dioxide (CO ₂), Dry chemical, or water spray. Do not use a solid water stream as it may scatter and spread fire.
5.2. Specific hazards	Decomposition products may include the following materials: carbon oxides; nitrogen oxides. Downwind personnel must be evacuated. Burning produces noxious and toxic fumes.
5.3. Special protective equipment for fire-fighters	Avoid contact with 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.
5.4. Further information	Do not allow run-off from fire-fighting to enter drains or water courses.

SECTION 6: Accidental release measures

6.1. 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).
6.2. 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).
6.3. 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



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6.4. Additional advice

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.

Stop leak if without risk.

SECTION 7: Handling and storage

7.1. 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 breathe 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.

7.2. 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 away from heat, sparks, and flames. 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.

7.3. Technical precautions

Do not store in reactive metal containers.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

8.1.1. Exposure Limit Values

CAS No.

ACGIH TLV

140-31-8

None established

80-05-7

5 mg/m³ (dust)

28064-14-4

None established

25068-38-6

None established

84852-15-3

None established

8.2. Control measures / Personal Protection

8.2.1. Recommended monitoring procedures

To meet the exposure limits for the materials listed above, 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.

8.2.2. 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



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	controls to keep worker exposure to airborne contaminants below any recommended or statutory limits.
8.2.3. Hygiene measures	Wash hands, forearms, and face after handling chemical products, before eating, smoking or 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/bottles with pure water and safety showers are close to the workstation location.
8.2.4. Respiratory protection	Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates 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. Select equipment to provide protection from the ingredients in Section 3 of this document.
8.2.5. 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.
8.2.6. Skin protection	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. The breakthrough time of the selected protective glove(s), shoes and clothing must be greater than the intended use period.
8.2.7. 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.

SECTION 9: Physical and chemical properties

Form	Liquid	Vapor Pressure	ND
Color	Green	Relative vapor density	>1
Odor	Irritating	Relative density	1.08
Odor threshold	ND	Water solubility	Slight
pH	about 10	Partition coefficient (n-octanol/water)	ND
Freezing point	ND	Auto-ignition temperature	ND
Boiling point	ND	Decomposition temperature	ND
Flash Point	ND	Viscosity	5,500 cP @ 73°F (22°C)
Evaporation rate	N/A	Oxidizing	N/A
Flammable Limits	ND	Explosion Limits	ND



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SECTION 10: Stability and reactivity

10.1 Stability	The product is stable. Under normal conditions of storage and use, hazardous polymerization will not occur.
10.2. Conditions to avoid	May burn but does not ignite readily. When heated, vapors may form explosive mixtures with air. Containers may explode when heated.
10.3. Materials to avoid	Reactive or incompatible with the following materials: Strong oxidizing agents, acids, alcohols, cresol, glycol, isocyanates, phenol, vinyl acetates, strong bases
10.4. Other hazards	Reacts with considerable heat release.
10.5. Hazardous decomposition products	Decomposition products may include the following materials: Carbon oxides, Nitrogen oxides, Ammonia, Toxic/Noxious fumes

SECTION 11: Toxicological information

11.1. Acute health hazard	Product: Acute oral toxicity: ND Acute dermal toxicity: ND Components: 140-31-8 Acute oral toxicity: LD50 (rabbit): 2097 mg/kg Acute dermal toxicity: LD50 (rabbit): 866 mg/kg 80-05-7 Acute oral toxicity: LD50 (rat): 3,250 mg/kg Acute dermal toxicity: LD50 (rabbit): 3,000 mg/kg 28064-14-4 Acute oral toxicity: LD50 (rat): >2,000 mg/kg Acute dermal toxicity: LD50 (rabbit): >2,000 mg/kg 25068-38-6 Acute oral toxicity: LD50 (rat): 30,000 mg/kg Acute dermal toxicity: LD50 (rat): >1,200 mg/kg 84852-15-3 Acute oral toxicity: LD50 (rat): 580 mg/kg Acute dermal toxicity: LD50 (rabbit): 2,031 mg/kg
11.2. Skin corrosion or irritation	Product: No data available, but may cause skin irritation or burns based on components present. Components: 140-31-8 adult rabbit corrosive to skin 28064-14-4 adult rabbit slight to moderate irritation to skin 25068-38-6 adult rabbit slight to moderate irritation to skin



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84852-15-3 rabbit severe irritation and burns

No skin irritation data available or sufficient for classification for other components present.

11.3. Serious eye damage or irritation

Product: No data available, but likely to be corrosive to eyes and may cause severe damage including blindness based on components present.

Components:

140-31-8	adult rabbit	corrosive to eyes
28064-14-4	adult rabbit	slightly irritating
25068-38-6	adult rabbit	slightly irritating
84852-15-3	rabbit	severe irritation and burns

No eye irritation data available or sufficient for classification for other components present.

11.4. Respiratory or skin sensitization

Product: No data available, but may cause skin sensitization in susceptible persons based on components present. Once sensitized, a severe allergic reaction may occur when subsequently exposed to very low levels. May aggravate pre-existing skin conditions like dermatitis.

Components:

140-31-8	adult guinea pig	Causes skin sensitization
28064-14-4	adult guinea pig	Causes skin sensitization
25068-38-6	adult guinea pig	Causes skin sensitization

No sensitization data available or sufficient for classification for other components present.

11.5. Germ cell mutagenicity

Product: No data available, but not likely to be mutagenic based on components.
Components: None of the components is known to have significant mutagenic effect.

11.6. Carcinogenicity

Product: No data available.
Components: None of the components is classified as a carcinogen.

11.7. Reproductive toxicity

Product: No data available.
Components: None of the components is known to have significant reproductive effects,

11.8. STOT – single exposure

Product: No data available, but irritation, sensitization and/or burns to respiratory system, skin, and eyes are likely– Lungs, Skin, and Eyes. Once sensitized, a severe allergic reaction may occur when subsequently exposed to very low levels. May aggravate pre-existing skin conditions like dermatitis.

Components: See Sections 11.2, 11.3, and 11.4 for specific information regarding the effects of the components.

11.9. STOT – repeated

Product: No data available, but, based on components, may cause damage to organs



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exposure	through prolonged or repeated exposure – Liver, Lungs, Skin, and Eyes.
11.10. Repeated dose toxicity	Product: No data available, but, based on components, Causes skin and eye irritation, damage, burns. Once sensitized, a severe allergic reaction may occur when subsequently exposed to very low levels. May aggravate pre-existing skin conditions like dermatitis. Changes to the liver, lungs, skin and eyes are also possible.
11.11. Aspiration toxicity	Product: Not determined. Components: Not determined.
11.12. Further information	Likely routes of exposure – inhalation; skin and eye contact.

SECTION 12: Ecological information

12.1. Ecotoxicity	Product: No data available, but likely to be toxic to aquatic life based on components present. Components: 140-31-8 Toxicity to fish – 96 h LC50: >100 mg/L Toxicity to daphnia and other aquatic invertebrates – 48 h LC50: 32 mg/L Toxicity to algae – 72 h LC50: >1,000 mg/L 80-05-7 Toxicity to fish – 96 h LC50: 4.6 mg/L 28064-14-4 Toxicity to fish – 96 h LC50: >1-10 mg/L Test Type: Similar material Toxicity to daphnia and other aquatic invertebrates – 48 h EC50: >1-10 mg/L Test Type: Similar material Toxicity to algae EC50: ND 25068-38-6 Toxicity to fish – 96 h LC50: 3.1 mg/L Test type: Fathead minnow Toxicity to daphnia and other aquatic invertebrates – 48 h LC50: 1.3 mg/L 84852-15-3 Toxicity to fish – 96 h static LC50: 0.05 mg/L Toxicity to daphnia and other aquatic invertebrates – 48 h static EC50: 0.085 mg/L Toxicity to algae – 96 h ErC50: 0.41 mg/L
12.2. Persistence and degradability	Product: No data available Components: 140-31-8 <60% after 28 days. 28064-14-4 Not readily biodegradable.



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25068-38-6 12% after 28 days.
84852-15-3 100% after 63 days.

12.3. Bioaccumulative potential

Product: No data available
Components: Not determined.

12.4. Mobility in soil

Product: Not determined.
Components: Not determined.

12.5. Other adverse effects

Product: Not determined. An environmental hazard cannot be excluded in the event of unprofessional handling or disposal, toxic to aquatic life.
Components: No data available

SECTION 13: Disposal considerations

13.1. 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 contaminated soils in waterways, drains or 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. Empty any remaining contents from packaging prior to disposal and dispose of as unused product. Do not reuse empty containers.

SECTION 14: Transport information



14.1. UN number

UN3066

14.2. UN proper shipping name

PAINT

14.3. Transport hazard class
International Carriage of
Dangerous Good by
Road/Rail
International Maritime
Dangerous Goods
International Air Transport

ADR/RID: 8

IMDG: 8



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Association	IATA:	8		
US Code of Federal Regulations	CFR	8		
Canadian Transportation of Dangerous Goods	TDG:	8		
US Department of Transportation	DOT:	8		
14.4. Packing group	II			
14.5. Environmental hazards	Environmental hazards: Yes		Marine pollutant: Yes	
	IMDG			
	EmS Code:		F-A S-B	
	IATA			
	Packing Instruction (Cargo):	855	Maximum quantity:	30 L
	Packing instruction (Passenger):	851	Maximum quantity:	1 L

SECTION 15: Regulatory information

15.1. OSHA Hazards	Irritant, Sensitizer, Corrosive			
15.2. CERCLA Reportable Quantity	Components	CAS No.	Component RQ	Product RQ
	None			
15.3. SARA 314 Extremely Hazardous Substances Reportable Quantity	This material does not contain any components with a section 314 Extremely Hazardous Substances RQ.			
15.4. SARA 311/312 Hazards	Acute health hazard, Chronic health hazard			
15.5. SARA Title III, Section 302 Reporting	No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.			
15.6. SARA Title III, Section 313 Reporting	The following chemicals in this material are subject to the reporting requirements of SARA Title III, Section 313: 4,4'-Isopropylidenediphenol			
15.7. Clean Air Act	The following chemical(s) are listed as HAP under the U.S. Clean Air Act, Section 12 (40 CFR 61): None.			
	This product does not contain any chemicals listed under the U.S. Clean Air Act Section 112(r) for Accidental Release Prevention (40 CFR 68.130, Subpart F).			
	The following chemical(s) are listed under the U.S. Clean Air Act Section 111 SOCM I Intermediate or Final VOC's (40 CFR 60.489): None.			
15.8. Clean Water Act	The following Hazardous Substances are listed under the U.S. Clean Water Act, Section 311, Table 116.4A: None.			



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15.9. US State Regulations

The following Hazardous Substances are listed under the U.S. Clean Water Act, Section 311, Table 117.3: None.

This product contains the following toxic pollutants listed under the U.S. Clean Water Act, Section 307: None.

Massachusetts Right-To-Know

4,4'-Isopropylidenediphenol

Pennsylvania Right-To-Know

4,4'-Isopropylidenediphenol

New Jersey Right-To-Know

4,4'-Isopropylidenediphenol

California Prop 65

This product contains no chemicals known to the State of California to cause cancer.

This product contains no chemicals known to the State of California to cause birth defects or other reproductive harm.

15.10. International Chemical Inventory Listing

TSCA (US)

Yes (All components of this product are on US inventory)

DSL (Canada)

Yes (All components of this product are on Canadian inventory)

AICS (Australia)

Yes (On Australian inventory or in compliance with inventory)

ICS (New Zealand)

Yes (On New Zealand inventory or in compliance with inventory)

ENCS (Japan)

Yes (On Japanese inventory or in compliance with inventory)

ISHL (Japan)

Yes (On Japanese inventory or in compliance with inventory)

KECI (Korea)

Yes (On Korean inventory or in compliance with inventory)

PICCS (Philippines)

Yes (On Philippine inventory or in compliance with inventory)

IECSC (China)

Yes (On Chinese inventory or in compliance with inventory)

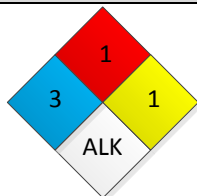
15.11. WHMIS Hazard Classification (Canada)

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

Canadian NPRI: None required.

SECTION 16: Other information

16.1. NFPA



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16.2. HMIS®

HEALTH	3
FLAMMABILITY	1
PHYSICAL HAZARD	1
PERSONAL PROTECTION	E

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 SDS'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.

16.3. Text of Risk phrases in Section 3

R36/38 – Irritating to eyes and skin.
 R43 – May cause sensitization by skin contact.
 R51/53 – Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

16.4. Text of Hazard statements in Section 3

H302 – Harmful if swallowed.
 H314 – Causes skin severe skin burns and eye damage.
 H315 – Causes skin irritation.
 H317 – May cause an allergic skin reaction.
 H318 – Causes serious eye damage.
 H319 – Causes serious eye irritation.
 H335 – May cause respiratory irritation.
 H373 – May cause damage to organs through prolonged or repeated exposure.
 H411 – Toxic to aquatic life with long-lasting effects.

16.5. Notice to Reader

The information provided herein was believed by Denso North America (“Denso”) to be accurate at the time of preparation and 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 MECHANABILITY 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.

16.6. Key/Legend to abbreviations and acronyms used in the safety data sheet

ACGIH American Conference Government Industrial Hygienists
 ADR European Agreement for International Carriage of Dangerous Materials Road
 AICS Australia, Inventory of Chemical Substances



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DSL	Canada, Domestic Substances List
NDSL	Canada, Non-Domestic Substances List
CAS	Chemical Abstract Service
CNS	Central Nervous System
DOT	Department of Transportation
EC50	Effective Concentration 50%
EGEST	EOSCA Generic Exposure Scenario Tool
EOSCA	European Oilfield Specialty Chemicals Association
EINECS	European Inventory of Existing Chemical Substances
ENCS	Japan, Inventory Existing and New Chemical Substances
GHS	Global Harmonization System
HMIS	Hazardous Materials Identification System
IARC	International Agency for Research on Cancer
IATA	International Air Transport Association
IC50	Inhibition Concentration 50%
IECSC	Inventory of Existing Chemical Substances in China
IMDG	International Maritime Dangerous Goods
KECI	Korea, Existing Chemical Inventory
LC50	Lethal Concentration 50%
LD50	Lethal Dose 50%
LOAEL	Lowest Observed Adverse Effect Level
MAK	Germany Maximum Concentration Values
N/A	Not Available
ND	Not Determined
NFPA	National Fire Protection Agency
NIOSH	National Institute for Occupational Safety & Health
NOAEL	No Observable Adverse Effect Level
NOEC	No Observed Effect Concentration
NTP	National Toxicology Program
NZIoC	New Zealand Inventory of Chemicals
OSHA	Occupational Safety & Health Administration
PEL	Permissible Exposure Limit
PICCS	Philippines Inventory Commercial Chemical Substances
PRNT	Presumed Not Toxic
RCRA	Resource Conservation Recovery Act
RID	European Agreement for International Carriage of Dangerous Materials Rail
RQ	Reportable Quantity
SARA	Superfund Amendments and Reauthorization Act
STEL	Short-Term Exposure Limit
TDG	Transportation of Dangerous Goods (Canada)
TLV	Threshold Limit Value
TSCA	Toxic Substance Control Act
TWA	Time Weighted Average
UVCB	Unknown or Variable Composition, Complex Reaction Products, and Biological Materials
WHMIS	Workplace Hazardous Materials Information System



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16.7. Prepared by

Denso EH & S Department

16.8. Telephone

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