

SECTION I: IDENTIFICATION**1.1 Product Identifier**

Product Name: Lonseal #650 Two-Component, Solvent-Free Epoxy Adhesive, Part A
 Product Code(s): ZAD650.5, ZAD6501

1.2 Relevant Identified Uses and Uses Advised Against

Product Use: Sheet vinyl flooring adhesive (see Technical Data Sheet for additional details)
 Product Restrictions: For use with sheet vinyl flooring only (see Technical Data Sheet for additional details)

1.3 Details of the Supplier of the Safety Data Sheet

Manufactured for: Lonseal, Inc.
 Address: 928 E. 238th Street
 Carson, CA 90745
 (310) 830-7111

24 Hour Emergency Phone Number(s): INFOTRAC – U.S. & Canada: 1-800-535-5053
 International: 1-352-353-3500

SECTION 2: HAZARD(S) IDENTIFICATION**2.1 Classification of the Substance or Mixture**

Skin Corrosion/Irritation , Category 2:	H315	Causes skin irritation.
Serious Eye Damage/Irritation , Category 2A:	H319	Causes serious eye irritation.
Skin Sensitizer , Category 1B:	H317	May cause an allergic skin reaction.
Toxic to Reproduction , Category 2:	H361	Suspected of damaging fertility or the unborn child.
Aquatic, Acute , Category 3:	H402	Harmful to aquatic life.
Aquatic, Chronic , Category 2:	H411	Toxic to aquatic life with long lasting effects.

2.2 Label Elements

Signal Word: WARNING

Hazard Statement(s):

H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H319	Causes serious eye irritation.
H361	Suspected of damaging fertility or the unborn child.
H402	Harmful to aquatic life.
H411	Toxic to aquatic life with long lasting effects.

Precautionary Statement(s):

P201	Obtain special instructions before use.
P202	Do not handle until all safety precautions have been read and understood.
P261	Avoid breathing dust or mist.
P264	Wash skin thoroughly after handling.
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, and face protection.
P302+P352	IF ON SKIN: Wash with plenty of water.
P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue Rinsing.
P308+P313	IF exposed or concerned: Get medical advice/attention.
P321	Specific treatment (see supplementary instructions on this label).
P333+P313	If skin irritation or rash occurs: Get Medical advice/attention.
P337+P313	If eye irritation persists: Get Medical advice/attention.
P362+P364	Take off contaminated clothing and wash it before reuse.
P391	Collect spillage.

Storage Statement(s)

P405	Store locked up.
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Disposal Statement(s)

P501 Dispose of contents/container in accordance with applicable regulations.

2.3 Other Hazards

This product contains crystalline silica (quartz sand). IARC has classified crystalline silica as a Group 1 carcinogen. Both IARC and NTP consider silica as a known human carcinogen. Evidence is based on the chronic and long-term exposure workers have had to respirable sized crystalline silica dust particles. Because this product is in liquid or paste form, it does not pose a dust hazard; therefore, this classification is not relevant. (Note: sanding of the hardened product may create a silica dust hazard).

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS**Substances**

n/a

Mixtures

Hazardous components within the meaning of 29 CFR 1910.1200 and related classification:

Ingredient/Chemical Name	CAS Number	Weight %	Classification*
Bisphenol A epoxy resin	25085-99-8	10 – 20	Skin Irrit. 2: H315 Skin Sens. 1B: H317 Eye Irrit. 2A: H319 Aquatic Chronic 2: H411
Alkyl epoxy resin	68609-97-2	5 – 10	Skin Irrit. 2: H315 Skin Sens. 1: H317
Silica sand	14808-60-7	1 – 2.5	Carc. 1A: H350 STOT RE 1: H372
4-Nonylphenol, branched	84852-15-3	0.49 – 1	Acute Tox. 4: H302 Skin Corr. 1B: H314 Eye Dam. 1: H318 Repr. Tox. 2: H361 Aquatic Acute 1: H400 Aquatic Chronic 1: H410

*The full text of the GHS Hazards Statement may be found in Section 16.

SECTION 4: FIRST-AID MEASURES**4.1 Description of necessary first-aid measures**

Eyes: After contact with the eyes, rinse with water with the eyelids open for a sufficient length of time, then consult an ophthalmologist immediately. Protect uninjured eye.

Ingestion: Do not induce vomiting; get medical attention, showing the SDS and the hazard label.

Inhalation: Remove casualty to fresh air and keep warm and at rest.

Skin: Immediately take off all contaminated clothing. OBTAIN IMMEDIATE MEDICAL ATTENTION. Obtain medical attention if skin related symptoms persist. Remove contaminated clothing immediately and dispose of safely. After contact with skin, wash immediately with soap and plenty of water.

4.2 Most Important Symptoms/Effects, Acute and Delayed

Eye irritation, eye damages, skin irritation, and erythema

4.3 Indication of Immediate Medical Attention and Special Treatment Needed

In case of accident or unwellness, seek medical advice immediately (show directions for use or safety data sheet if possible).

SECTION 5: FIRE-FIGHTING MEASURES**5.1 Suitable Extinguishing Media**

Water, carbon dioxide (CO₂)

Unsuitable Extinguishing Media: None in particular

5.2 Specific Hazards Arising from the Substance or Mixture

Do not inhale explosion or combustion gases.

Burning produces heavy smoke.

Hazardous Combustion Products: n/a**Explosive Properties:** n/a**Oxidizing Properties:** n/a**5.3 Special Protective Actions for Fire-Fighters**

Use suitable breathing apparatus.

Collect contaminated fire extinguishing water separately. This must not be discharged into drains.

Move undamaged containers from immediate hazard area if it can be done safely.

SECTION 6: ACCIDENTAL RELEASE MEASURES**6.1 Personal Precautions, Protective Equipment, and Emergency Procedures**

Wear personal protection equipment (PPE).

Remove persons to safety.

See Protective Measures under Section 7 and Section 8.

6.2 Environmental Precautions

Not noted by mfg.

6.3 Methods and Materials for Containment and Cleaning Up**Suitable material for taking up:** absorbing material, organic, sand

Wash with plenty of water.

SECTION 7: HANDLING AND STORAGE**7.1 Precautions for Safe Handling**

Avoid contact with skin and eyes, inhalation of vapors and mists.

Exercise the greatest care when handling or opening container.

Do not use empty containers before they have been cleaned.

Before making transfer operations, assure that there are not any incompatible material residuals in the containers.

Contaminated clothing should be changed before entering eating areas.

Do not eat or drink while working.

See also Section 8 for recommended protective equipment.

7.2 Conditions for Safe Storage, Including Any Incompatibilities**Storage Temperature:** n/a**Incompatible Components:** None in particular**Instructions as regards storage premises:** Adequately ventilated premises**SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION****8.1 Control Parameters**

List of components with OEL value:

Component	Source	Long Term (mg/m ³)	Behavior	Note
Silica sand	ACGIH	0.025	Not noted	A2 – Suspected Human Carcinogen; lung cancer; pulmonary fibrosis

8.2 Appropriate Engineering Controls

n/a

8.3 Appropriate Protection Measures, Including Personal Protective Equipment**Eye Protection:** Use close fitting safety goggles. Do not use eye lenses.**Respiratory Protection:** n/a**Skin Protection:** Use clothing that provides comprehensive protection to the skin (e.g. cotton, rubber, PVC, or Viton).**Hand Protection:** Use protective gloves that provide comprehensive protection (e.g. PVC, neoprene, or rubber).**SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES****Appearance:** Liquid Paste**Odor:** n/a**Odor Threshold:** n/a

pH:	n/a
Melting Point/Freezing Point:	n/a
Initial Boiling Point and Boiling Range:	n/a
Flash Point:	>94 °C (201 °F)
Evaporation Rate:	Slower than ether
Flammability (Solid, Gas):	n/a
Upper/Lower Flammability or Explosive Limits:	n/a
Vapor Pressure:	n/a
Vapor Density:	>1
Relative Density:	1.50 g/cm ³
Solubility in Water:	Insoluble
Partition Coefficient (n-octanol/water):	n/a
Auto-Ignition Temperature:	n/a
Decomposition Temperature:	n/a
Viscosity:	n/a
Substance groups relevant properties	n/a
Miscibility	n/a
Fat Solubility	n/a
Conductivity	n/a

SECTION IO: STABILITY AND REACTIVITY

10.1 Reactivity

Stable under normal conditions.

10.2 Chemical Stability

Data not available

10.3 Possibility of Hazardous Reactions

None

10.4 Conditions to Avoid

Stable under normal conditions

10.5 Incompatible Materials

None in particular

10.6 Hazardous Decomposition Products

None

SECTION II: TOXICOLOGICAL INFORMATION

Toxicological Information of the Mixture:

There is no toxicological data available on the mixture. Consider the individual concentration of each component to assess toxicological effects resulting from exposure to the mixture.

Toxicological Information on Main Components of the Mixture:

4-Nonylphenol, branched	a) acute toxicity	LD50 Oral, Rat = 1300 mg/kg LD50 Skin, Rabbit >2000 mg/kg
Alkyl epoxy resin	a) Acute toxicity	LD50 Oral, Rat = 17100 mg/kg LD50 Skin, Rabbit >3987 mg/kg
Silica sand	a) acute toxicity	LD50 Oral, Rat = 500 mg/kg

If not differently specified, the information required in the regulation and listed below must be considered as n/a:

Acute toxicity, skin corrosion/irritation, serious eye damage/irritation, respiratory or skin sensitization, germ cell mutagenicity, carcinogenicity, reproductive toxicity, STOT-single exposure, STOT-repeated exposure, and aspiration hazard.

Substance(s) listed on the IARC Monographs:	Silica sand, Group 1
Substance(s) listed as OSHA Carcinogen(s):	Silica sand
Substance(s) listed as NIOSH Carcinogen(s):	Silica sand
Substance(s) listed on the NTP Report on Carcinogen(s):	Silica sand

SECTION 12: ECOLOGICAL INFORMATION

12.1 Toxicity

Adopt good working practices, so that the product is not released into the environment.

Eco-Toxicological Information:

List of components with Eco-Toxicological Properties (Aquatic Acute Toxicity):

Component

4-Nonylphenol, branched

LC50 Fish (48h) L. idus 0.95 mg/L ^a	LC50 Fish (96h) P. promelas 0.135 mg/L ^b , 1351 mg/L (EPA), 1.35 mg/L (IUCLID)	LC100 Fish (48h) L. idus 1.1 mg/L ^a	LOEC Fish (33d) P. promelas 14 µg/L ^c	NOEC Fish (33d) P. promelas 7.4µg/L ^c	EC0 Daphnia (48h) D. magna <100 µg/L ^d	EC50 Daphnia (48h) D. magna 140 µg/L ^d , 14 mg/L (IUCLID)
EC100 Daphnia (48h) D. magna >400 µg/L ^d	LOEC Daphnia (21d) D. magna >100 µg/L ^e	NOEC Daphnia (21d) D. magna 0.024 µg/L ^f	EC10 Algae (72h) S. subspicatus (D. subspicatus) 0.5 mg/L ^h	EC50 Algae (72h) S. subspicatus (D. subspicatus) 1.3 mg/L ^h ; P. subcapitata 16 mg/L (EPA); D. subspicatus 13 mg/L (IUCLID)	EC50 Algae (96h) P. subcapitata 36 mg/L (EPA)	EC90 Algae (72h) S. subspicatus (D. subspicatus) 3.2 mg/L ^h

Silica sand

LC50 Fish (72h) Carp >10000.00000 mg/L

^aHuels study, 1988 (unpublished)

^bHolcombe, G.W., Phipps, G.L., Knuth, M.L., and Felhaber, T. (1984) Environ. Pollut. (Series A) 35, 367 – 381

^cChemical Manufacturers Association (1991) Two environmental effects 4-nonylphenol final reports: 1) Chronic toxicity of Nonylphenol to the mysid, *Mysidopsis bahia*, EnviroSystems Study Number 8977-CMA, and 2) Early life stage toxicity of Nonylphenol to the fathead minnow, *Pimphelas promelas*, EnviroSystems Study Number 8979-CMA

^dHuels report No. DK-522, 1992 (unpublished)

^eHuels report No. DL-143, 1992 (unpublished)

^fICI PLC (1991) Nonyl Phenol: Chronic Toxicity to *Daphnia magna*, Report No. BLS1319/B (interim), BL4716/B (final)

^hHuels study (unpublished)

12.2 Persistence and Degradability

n/a

12.3 Bioaccumulative Potential

n/a

12.4 Mobility in Soil

n/a

12.5 Other Adverse Effects

n/a

SECTION 13: DISPOSAL CONSIDERATIONS**13.1 Disposal Methods**

Dispose of in accordance with all applicable federal, state, and local regulations. Consult authorities before disposal.

SECTION 14: TRANSPORT INFORMATION

	DOT/ADR	IMO/IMDG	ICAO/IATA
UN Number:	UN3082	3082	3082
UN Proper Shipping Name:	Environmentally hazardous substance, Liquid, n.o.s. (Bisphenol A epoxy resin; 4-nonylphenol, branched)	Environmentally hazardous substance, Liquid, n.o.s. (Bisphenol A epoxy resin; 4-nonylphenol, branched)	Environmentally hazardous substance, Liquid, n.o.s. (Bisphenol A epoxy resin; 4-nonylphenol, branched)
Transport Hazard Class(es):	9	9	9
Packing Group:	III	III	III
Environmental Hazards:	Marine Pollutant: Yes	Environmental Pollutant: n/a	
Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code:	n/a		
Special Precautions for User:			
DOT:			
Special Provision(s):	8, 146, 173, 335, IB3, T4, TP1		
Label(s):	9		
Symbol:	n/a		
Cargo Aircraft:	n/a		
Passenger Aircraft:	n/a		
Bulk:	n/a		
Non-Bulk:	n/a		
ADR-RID:			
Exempt:	No		
Label:	9		
Hazard Identification Number:	90		
Tunnel Restriction Code:	3 (E)		
IATA:			
Passenger Aircraft:	964		
Cargo Aircraft:	964		
Label:	9		
Subrisk:	-		
ERG:	9L		
Special Provisions:	A97, A158		
IMDG:			
Stowage Code:	Category A		
Stowage Note:	-		
Subrisk:	-		
Special Provision(s):	274, 335		
Page:	n/a		
Label:	9		
EmS:	F-A, S-F		
MFAG:	n/a		

SECTION 15: REGULATORY INFORMATION

Toxic Substance Control Act (TSCA): All components are listed on the TSCA Inventory.

Listed Substance(s)	Section
Bisphenol A epoxy resin	8b
Alkyl epoxy resin	8b
4-nonylphenol, branched	5a – SNUR, 8a – PAIR, 8b, 12b
Silica sand	8b

Superfund Amendments and Reauthorization Act (SARA)

Section 302 – Extremely Hazardous Substances: No substances listed

Section 304 – Hazardous Substances: No substances listed

Section 313 – Toxic Chemical List: No substances listed

Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA)

Listed Substance(s): No substances listed

Clean Air Act (CAA)

Listed Substance(s): No substances listed

Clean Water Act (CWA)

Listed Substance(s): No substances listed

USA – State Regulations

California Proposition 65: Silica sand (carcinogen)

Massachusetts RTK: Silica sand

New Jersey RTK: Silica sand

Pennsylvania RTK: Silica sand

Canada – Federal Regulations

Domestic Substances List (DSL): All the substances are listed in the DSL

Non-Domestic Substances List (NDSL): No substances listed

National Pollutant Release Inventory (NPRI): No substances listed

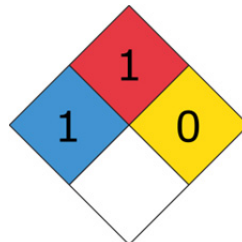
SECTION 16: OTHER INFORMATION

Additional Classification Information:

HMIS:

Lonseal #650, Part A	
HEALTH	* 1
FLAMMABILITY	1
PHYSICAL HAZARD	0
PERSONAL PROTECTION 	B

NFPA:



Full Text of GHS Hazard Statements from Section 3:

H302	Harmful if swallowed.
H314	Causes 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.
H341	Suspected of causing genetic defects.
H350	May cause cancer.
H361	Suspected of damaging fertility or the unborn child.
H372	Causes damage to organs through prolonged or repeated exposure if inhaled.
H400	Very toxic to aquatic life.
H402	Harmful to aquatic life.
H410	Very toxic to aquatic life with long lasting effects.
H411	Toxic to aquatic life with long lasting effects.
H412	Harmful to aquatic life with long lasting effects.

Disclaimer: Reasonable care has been taken in the preparation of this information, but the manufacturer makes no warranty of merchantability or any other warranty, expressed or implied, with respect to this information. This information relates only to the product designated herein, and does not relate to its use in combination with other materials or in any other process. The manufacturer makes no representations and assumes no liability for any direct, incidental, or consequential damages resulting from its use. The information herein is presented in good faith and based upon data from manufacturers or technical sources, and is believed to be accurate as of the revision date given. It is the buyer's responsibility to ensure that its activities comply with Federal, State, or local laws. Conditions of use are beyond Lonseal's control and therefore users are responsible to verify this data under their own conditions to determine suitability for their purpose. Users of this product must comply with all applicable health and safety laws, regulations, and orders. Users of this product assume all risks of use, handling, and disposal, or from use of the information contained within this document.

General Statements:

Keep out of the reach of children.

For professional or industrial use only.

If you cannot read, or do not understand all directions, cautions, and warnings for this product, DO NOT use.

Abbreviations (may not actually appear within document):

ACGIH	American Conference of Governmental Industrial Hygienists
ADR	Accord européen relatif au transport international de marchandises Dangereuses par Route (European agreement for the international carriage of Dangerous goods by Road)
Asp.	Aspiration
ATE	Acute Toxicity Estimate
bw	Body Weight
Carc.	Carcinogenicity
CAS	Chemical Abstracts Service
CFR	Code of Federal Regulations
CLP	Classification, Labeling, and Packaging
CMR	Carcinogenicity, Mutagenicity, and Toxicity for Reproduction
CNS	Central Nervous System
cSt	Centistokes
d	Day(s)
Dam.	Damage
DIN	Deutsches Institut für Normung (German Institute for Standardization)
DNEL	Derived No Effect Level
DOT	Department of Transportation
EC	European Commission
EC0	Effective Concentration for 0% of Test Population
EC10	Effective Concentration for 10% of Test Population
EC50	Effective Concentration for 50% of Test Population
EC90	Effective Concentration for 90% of Test Population
EC100	Effective Concentration for 100% of Test Population
EPA	Environmental Protection Agency
EPCRA	Emergency Planning and Community Right-to-Know Act
ErC50	Effective Concentration for 50% of Test Population
ERG	Emergency Response Guidebook
EU	European Union
Flam.	Flammable
g	Gram(s)
GHS	Globally Harmonized System
h	Hour(s)
Haz.	Hazard
HMIS	Hazardous Materials Identification System
hPa	Hectopascal(s)
hr.	Hour(s)
IARC	International Agency for Research on Cancer
IATA	International Air Transport Association
IBC	Intermediate Bulk Container
ICAO	International Civil Aviation Organization
IMDG	International Maritime Dangerous Goods
IMO	International Maritime Organization
IOELV	Indicative Occupational Exposure Limit Values
Irrit.	Irritation

IUCLID	International Uniform Chemical Information Database
kg	Kilogram(s)
L	Liter(s)
lbs.	pounds
LC50	Lethal Concentration for 50% of Test Population
LC100	Lethal Concentration for 100% of Test Population
LD50	Lethal Dose for 50% of Test Population
Liq.	Liquid
LOEC	Lowest Observed Effect Concentration
LTEL	Long-Term Exposure Limit
m	Meter(s)
MAK	Maximale Arbeitsplatz-Konzentration (Maximum Workplace Concentration)
MARPOL	Maritime Pollution
mfg.	Manufacturer
mg	Milligram(s)
mL	Milliliter(s)
mPa	Millipascal(s)
Muta.	Germ Cell Mutagenicity
n/a	Not Applicable
NFPA	National Fire Protection Association
NIOSH	National Institute for Occupational Safety and Health
NOEC	No Observed Effect Concentration
NTP	National Toxicology Program
n.o.s.	Not Otherwise Specified
OEL	Occupational Exposure Limits
OSHA	Occupational Safety and Health Administration
Pa	Pascal(s)
PBT	Persistent Bioaccumulative and Toxic
PEL	Permissible Exposure Limit
PNEC	Predicted No Effect Concentration
PPE	Personal Protective Equipment
ppm	Parts Per Million
PVC	Polyvinyl Chloride
Repr.	Reproductive
Respir.	Respiratory
RQ	Reportable Quantities
RTK	Right-to-Know
SDS	Safety Data Sheet
Sens.	Sensitization
STEL	Short-Term Exposure Limit
STOT	Specific Target Organ Toxicity
STOT RE	Specific Target Organ Toxicity, Repeat Exposure
STOT SE	Specific Target Organ Toxicity, Single Exposure
TCC	Tagliabue Closed Cup
THF	Tetrahydrofuran
TLV	Threshold Limit Value
Tox.	Toxicity
TWA	Time Weighted Average
UN	United Nations
US	United States
vPvB	Very Persistent and very Bioaccumulative
WEL	Workplace Exposure Limit
WHMIS	Workplace Hazardous Materials Information System

Revision History:

6.1.2015	Initial SDS Release. SDS provided by mfg. was incorporated into Lonseal's letterhead/layout. Items contained within Section 16, from "DISCLAIMER" and below, are exclusive to Lonseal's version of the SDS.
9.15.2015	SDS updated to match the most recently supplied manufacturer's revision, and added a new product code. Sections revised: 1.1, 2.1, 2.2, 2.3, 3, 4.1, 4.2, 5.2, 6.1, 7.1, 11, 12.1, 15, and 16.
9.6.2016	SDS updated to match the most recently supplied manufacturer's revision. Sections revised: 1, 2, 3, 4.1, 5.1, 8, 9, 11, 12.1, 14, 15, and 16.

5.20.2021 SDS formatting updated. Minor grammar and typo corrections. Sections 2, 3, 11, 12, and 15 updated to match most current revision from the manufacturer. HMIS and NFPA symbols replaced the listed values under Section 16. Updated abbreviations list under Section 16.

SECTION 1: IDENTIFICATION**1.1 Product Identifier**

Product Name: Lonseal #650 Two-Component, Solvent-Free Epoxy Adhesive, Part B
 Product Code(s): ZAD650.5, ZAD6501

1.2 Relevant Identified Uses and Uses Advised Against

Product Use: Sheet vinyl flooring adhesive (see Technical Data Sheet for additional details)
 Product Restrictions: For use with sheet vinyl flooring only (see Technical Data Sheet for additional details)

1.3 Details of the Supplier of the Safety Data Sheet

Manufactured for: Lonseal, Inc.
 Address: 928 E. 238th Street
 Carson, CA 90745
 (310) 830-7111

24 Hour Emergency Phone Number(s): INFOTRAC – U.S. & Canada: 1-800-535-5053
 International: 1-352-353-3500

SECTION 2: HAZARD(S) IDENTIFICATION**2.1 Classification of the Substance or Mixture**

Acute Toxicity , Category 2:	H330	Fatal if inhaled.
Skin Corrosion/Irritation , Category 1B:	H314	Causes severe skin burns and eye damage.
Serious Eye Damage/Irritation , Category 1:	H318	Causes serious eye damage.
Skin Sensitizer , Category 1B:	H317	May cause an allergic skin reaction.
Toxic to Reproduction , Category 2:	H361	Suspected of damaging fertility or the unborn child.
Specific Target Organ Toxicity, Single Exposure , Category 3:	H335	May cause respiratory irritation.
Aquatic, Chronic , Category 3:	H412	Harmful to aquatic life with long lasting effects.

2.2 Label Elements

Signal Word: DANGER

Hazard Statement(s):

H314	Causes severe skin burns and eye damage.
H317	May cause an allergic skin reaction.
H318	Causes serious eye damage.
H330	Fatal if inhaled.
H335	May cause respiratory irritation.
H361	Suspected of damaging fertility or the unborn child.
H412	Harmful to aquatic life with long lasting effects.

Precautionary Statement(s):

P201	Obtain special instructions before use.
P202	Do not handle until all safety precautions have been read and understood.
P260	Do not breathe mist/vapors/spray.
P264	Wash skin thoroughly after handling.
P271	Use only outdoors or in 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, and face protection.
P284	In case of inadequate ventilation wear respiratory protection.
P301+P330+P331	IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
P303+P361+P353	IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water.
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.
P308+P313	IF exposed or concerned: Get medical advice/attention.
P310	Immediately call a doctor.

P312 Call a POISON CENTER if you feel unwell.
 P320 Specific treatment is urgent (see supplementary instructions on this label).
 P333+P313 If skin irritation or rash occurs: Get Medical advice/attention.
 P363 Wash contaminated clothing before reuse.

Storage Statement(s)

P403+P233 Store in a well-ventilated place. Keep container tightly closed.
 P405 Store locked up.

Disposal Statement(s)

P501 Dispose of contents/container in accordance with applicable regulations

2.3 Other Hazards

None noted by the manufacturer.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS**Substances**

n/a

Mixtures

Hazardous components within the meaning of 29 CFR 1910.1200 and related classification:

Ingredient/Chemical Name	CAS Number	Weight %	Classification*
1,3-Bis(3-(dimethylamino)propyl)urea	52338-87-1	25 – 50	Eye Irrit. 2A: H319 Skin Irrit. 2: H315
Diethylene triamine	111-40-0	25 – 50	Acute Tox. 4: H302 Acute Tox. 4: H312 Skin Corr. 1B: H314 Skin Sens. 1B: H317 Eye Dam. 1: H318 Acute Tox. 2: H330 STOT SE 3: H335 Aquatic Chronic 3: H412
Bisphenol A	80-5-7	10 – 20	Skin Sens. 1: H317 Eye Dam. 1: H318 STOT SE 3: H335 Repr. Tox. 2: H361
Diethylenetriamine reaction product with bisphenol A and epichlorohydrin polymer	68610-56-0	10 – 20	Skin Irrit. 2: H315 Eye Irrit. 2A: H319

*The full text of the GHS Hazards Statement may be found in Section 16.

SECTION 4: FIRST-AID MEASURES**4.1 Description of necessary first-aid measures**

Eyes: After contact with the eyes, rinse with water with the eyelids open for a sufficient length of time, then consult an ophthalmologist immediately. Protect uninjured eye.

Ingestion: Do not induce vomiting; get medical attention, showing the SDS and the hazard label.

Inhalation: If breathing is irregular or stopped, administer artificial respiration. In case of inhalation, consult a doctor immediately and show him/her packing or label.

Skin: Immediately take off all contaminated clothing. Obtain medical attention if skin related symptoms persist. Remove contaminated clothing immediately and dispose of safely. After contact with skin, wash immediately with soap and plenty of water.

4.2 Most Important Symptoms/Effects, Acute and Delayed

Eye irritation, eye damages, skin irritation, and erythema

4.3 Indication of Immediate Medical Attention and Special Treatment Needed

In case of accident or unwellness, seek medical advice immediately (show directions for use or safety data sheet if possible).

SECTION 5: FIRE-FIGHTING MEASURES

5.1 Suitable Extinguishing Media

Water, carbon dioxide (CO₂)

5.2 Specific Hazards Arising from the Substance or Mixture

Do not inhale explosion or combustion gases.
Burning produces heavy smoke.

Hazardous Combustion Products: n/a

Explosive Properties: n/a

Oxidizing Properties: n/a

5.3 Special Protective Actions for Fire-Fighters

Use suitable breathing apparatus.
Collect contaminated fire extinguishing water separately. This must not be discharged into drains.
Move undamaged containers from immediate hazard area if it can be done safely.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1 Personal Precautions, Protective Equipment, and Emergency Procedures

Wear personal protection equipment (PPE).
Wear breathing apparatus if exposed to vapors/dusts/aerosols.
Provide adequate ventilation.
Use appropriate respiratory protection.
See Protective Measures under Section 7 and Section 8.

6.2 Environmental Precautions

Not noted by mfg.

6.3 Methods and Materials for Containment and Cleaning Up

Suitable material for taking up: absorbing material, organic, sand
Wash with plenty of water.

SECTION 7: HANDLING AND STORAGE

7.1 Precautions for Safe Handling

Avoid contact with skin and eyes, inhalation of vapors and mists.
Exercise the greatest care when handling or opening container.
Do not use on extensive surface areas in premises where there are occupants.
Use localized ventilation system.
Do not use empty containers before they have been cleaned.
Before making transfer operations, assure that there are not any incompatible material residuals in the containers.
Contaminated clothing should be changed before entering eating areas.
Do not eat or drink while working.
See also Section 8 for recommended protective equipment.

7.2 Conditions for Safe Storage, Including Any Incompatibilities

Storage Temperature: n/a

Incompatible Components: None in particular

Instructions as regards storage premises: Cool and adequately ventilated. Always keep in a well ventilated space.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION**8.1 Control Parameters**

List of components with OEL value:

Component	Source	Short Term	Long Term	Behavior	Note
Diethylene triamine	ACGIH		1 ppm		Skin – potential significant contribution to overall exposure by the cutaneous route; eye and upper respiratory tract irritation
	MAK (Austria)		1 ppm 4 mg/m ³		
	MAK (Switzerland)		1 ppm 4 mg/m ³		
Bisphenol A	EU		10 mg/m ³	Indicative	
	MAK (Austria)	2 mg/m ³	5 mg/m ³		
	MAK (Germany)		5 mg/m ³		
	MAK (Switzerland)		5 mg/m ³		

8.2 Appropriate Engineering Controls

n/a

8.3 Appropriate Protection Measures, Including Personal Protective Equipment**Eye Protection:** Use close fitting safety goggles. Do not use eye lenses.**Respiratory Protection:** Use adequate protective respiratory equipment.**Skin Protection:** Use clothing that provides comprehensive protection to the skin (e.g. cotton, rubber, PVC, or Viton).**Hand Protection:** Use protective gloves that provide comprehensive protection (e.g. PVC, neoprene, or rubber).**SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES**

Appearance:	Liquid
Odor:	Like Amines
Odor Threshold:	n/a
pH:	n/a
Melting Point/Freezing Point:	n/a
Initial Boiling Point and Boiling Range:	n/a
Flash Point:	>100 °C (212 °F)
Evaporation Rate:	n/a
Flammability (Solid, Gas):	Not noted by mfg.
Upper/Lower Flammability or Explosive Limits:	n/a
Vapor Pressure:	n/a
Vapor Density:	n/a
Relative Density:	0.98 g/cm ³
Solubility in Water:	n/a
Partition Coefficient (n-octanol/water):	n/a
Auto-Ignition Temperature:	n/a
Decomposition Temperature:	n/a
Viscosity:	n/a
Substance groups relevant properties	n/a
Miscibility	n/a
Fat Solubility	n/a
Conductivity	n/a

SECTION IO: STABILITY AND REACTIVITY**10.1 Reactivity**

Stable under normal conditions.

10.2 Chemical Stability

Data not available

10.3 Possibility of Hazardous Reactions

None

10.4 Conditions to Avoid

Stable under normal conditions

10.5 Incompatible Materials

None in particular

10.6 Hazardous Decomposition Products

None

SECTION II: TOXICOLOGICAL INFORMATION**Toxicological Information of the Mixture:**

There is no toxicological data available on the mixture. Consider the individual concentration of each component to assess toxicological effects resulting from exposure to the mixture.

Toxicological Information on Main Components of the Mixture:

Diethylene triamine	a) acute toxicity	LC50 Inhalation, Rat = 70 mg/L (4h LD50) LD50 Oral, Rat = 819 mg/kg LD50 Skin, Rabbit = 672 mg/kg
Bisphenol A	a) acute toxicity	LC50 Inhalation, Rat > 17 mg/L (6h) LD50 Oral, Rat = 3200 mg/kg LD50 Skin, Rabbit = 3000 mg/kg

If not differently specified, the information required in the regulation and listed below must be considered as n/a:

Acute toxicity, skin corrosion/irritation, serious eye damage/irritation, respiratory or skin sensitization, germ cell mutagenicity, carcinogenicity, reproductive toxicity, STOT-single exposure, STOT-repeated exposure, and aspiration hazard.

Substance(s) listed on the IARC Monographs:	None
Substance(s) listed as OSHA Carcinogen(s):	None
Substance(s) listed as NIOSH Carcinogen(s):	None
Substance(s) listed on the NTP Report on Carcinogen(s):	None

SECTION 12: ECOLOGICAL INFORMATION**12.1 Toxicity**

Adopt good working practices, so that the product is not released into the environment.

Eco-Toxicological Information:

List of components with Eco-Toxicological Properties (Aquatic Acute Toxicity):

Component

Diethylene triamine

EC50**Algae
(72h)**

P. subcapitata
1164 mg/L
(IUCLID)

EC50**Algae
(96h)**

P. subcapitata
345.60000 mg/L
(EPA);
D. subspicatus
592 mg/L
(IUCLID)

EC50**Daphnia
(24h)**

D. magna
37.00000 mg/L

EC50**Daphnia
(48h)**

D. magna
16.00000 mg/L;
D. magna
16 mg/L
(IUCLID)

LC50**Fish
(96h)**

L. idus
430.00000 mg/L;
P. reticulata
3.60000 mg/L
(EPA);
P. reticulata
248 mg/L
(IUCLID)

Bisphenol A

EC50**Algae
(96h)**

P. subcapitata
2.50000 mg/L
(IUCLID)

EC50**Daphnia
(48h)**

D. magna
3.90000 mg/L;
D. magna
9.2 mg/L
(EPA);
D. magna
3.9 mg/L
(IUCLID);
D. magna
10.20000 mg/L
(IUCLID)

LC50**Fish
(96h)**

P. promelas
3.60000 mg/L
(EPA);
P. promelas
4 mg/L
(EPA);
B. rerio
9.90000 mg/L
(IUCLID);
O. mykiss
4 mg/L
(IUCLID)

12.2 Persistence and Degradability

n/a

12.3 Bioaccumulative Potential

n/a

12.4 Mobility in Soil

n/a

12.5 Other Adverse Effects

n/a

SECTION 13: DISPOSAL CONSIDERATIONS**13.1 Disposal Methods**

Dispose of in accordance with all applicable federal, state, and local regulations. Consult authorities before disposal.

SECTION 14: TRANSPORT INFORMATION

	DOT/ADR	IMO/IMDG	ICAO/IATA
UN Number:	UN2079	2079	2079
UN Proper Shipping Name:	Diethylenetriamine	Diethylenetriamine	Diethylenetriamine
Transport Hazard Class(es):	8	8	8
Packing Group:	II	II	II
Environmental Hazards:	Marine Pollutant: No	Environmental Pollutant: n/a	
Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code:	n/a		
Special Precautions for User:			
DOT:			
Special Provision(s):	B2, IB2, T7, TP2		
Label(s):	8		
Symbol:	n/a		
Cargo Aircraft:	n/a		
Passenger Aircraft:	n/a		
Bulk:	n/a		
Non-Bulk:	n/a		
ADR-RID:			
Exempt:	Not noted by mfg.		
Label:	8		
Hazard Identification Number:	80		
Tunnel Restriction Code:	2 (E)		
IATA:			
Passenger Aircraft:	851		
Cargo Aircraft:	855		
Label:	8		
Subrisk:	-		
ERG:	8L		
Special Provisions:	-		
IMDG:			
Stowage Code:	Category A		
Stowage Note:	Clear of living quarters. "Separated from" acids.		
Subrisk:	-		
Special Provision(s):	-		
Page:	n/a		
Label:	n/a		
EmS:	F-A, S-B		
MFAG:	n/a		

SECTION 15: REGULATORY INFORMATION

Toxic Substance Control Act (TSCA): All components are listed on the TSCA Inventory.

Listed Substance(s)	Section
1,3Bis(3-(dimethylamino)propyl)urea	8b
Diethylene triamine	8b
Bisphenol A	8b
Diethylenetriamine reaction product with bisphenol A and epichlorohydrin polymer	8b

Superfund Amendments and Reauthorization Act (SARA)

Section 302 – Extremely Hazardous Substances: No substances listed

Section 304 – Hazardous Substances: No substances listed

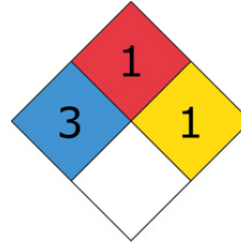
Section 313 – Toxic Chemical List: Bisphenol A

Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA)

Listed Substance(s): No substances listed

Clean Air Act (CAA)**Listed Substance(s):** Bisphenol A [§112(b) – HON]**Clean Water Act (CWA)****Listed Substance(s):** No substances listed**USA – State Regulations****California Proposition 65:** Bisphenol A**Massachusetts RTK:** Diethylene triamine, Bisphenol A**New Jersey RTK:** Diethylene triamine, Bisphenol A**Pennsylvania RTK:** Diethylene triamine, Bisphenol A**Canada – Federal Regulations****Domestic Substances List (DSL):** All the substances are listed in the DSL**Non-Domestic Substances List (NDSL):** No substances listed**National Pollutant Release Inventory (NPRI):** No substances listed**SECTION 16: OTHER INFORMATION****Additional Classification Information:****HMIS:**

Lonseal #650, Part B	
HEALTH	* 3
FLAMMABILITY	1
PHYSICAL HAZARD	1
PERSONAL PROTECTION 	C

NFPA:**Full Text of GHS Hazard Statements from Section 3:**

H302	Harmful if swallowed.
H312	Harmful in contact with skin.
H314	Causes 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.
H330	Fatal if inhaled.
H335	May cause respiratory irritation.
H361	Suspected of damaging fertility or the unborn child.
H412	Harmful to aquatic life with long lasting effects.

Disclaimer: Reasonable care has been taken in the preparation of this information, but the manufacturer makes no warranty of merchantability or any other warranty, expressed or implied, with respect to this information. This information relates only to the product designated herein, and does not relate to its use in combination with other materials or in any other process. The manufacturer makes no representations and assumes no liability for any direct, incidental, or consequential damages resulting from its use. The information herein is presented in good faith and based upon data from manufacturers or technical sources, and is believed to be accurate as of the revision date given. It is the buyer's responsibility to ensure that its activities comply with Federal, State, or local laws. Conditions of use are beyond Lonseal's control and therefore users are responsible to verify this data under their own conditions to determine suitability for their purpose. Users of this product must comply with all applicable health and safety laws, regulations, and orders. Users of this product assume all risks of use, handling, and disposal, or from use of the information contained within this document.

General Statements:

Keep out of the reach of children.

For professional or industrial use only.

If you cannot read, or do not understand all directions, cautions, and warnings for this product, DO NOT use.

Abbreviations (may not actually appear within document):

ACGIH	American Conference of Governmental Industrial Hygienists
ADR	Accord européen relatif au transport international de marchandises Dangereuses par Route (European agreement for the international carriage of Dangerous goods by Road)
Asp.	Aspiration

ATE	Acute Toxicity Estimate
bw	Body Weight
Carc.	Carcinogenicity
CAS	Chemical Abstracts Service
CFR	Code of Federal Regulations
CLP	Classification, Labeling, and Packaging
CMR	Carcinogenicity, Mutagenicity, and Toxicity for Reproduction
CNS	Central Nervous System
cSt	Centistokes
d	Day(s)
Dam.	Damage
DIN	Deutsches Institut für Normung (German Institute for Standardization)
DNEL	Derived No Effect Level
DOT	Department of Transportation
EC	European Commission
EC0	Effective Concentration for 0% of Test Population
EC10	Effective Concentration for 10% of Test Population
EC50	Effective Concentration for 50% of Test Population
EC90	Effective Concentration for 90% of Test Population
EC100	Effective Concentration for 100% of Test Population
EPA	Environmental Protection Agency
EPCRA	Emergency Planning and Community Right-to-Know Act
ErC50	Effective Concentration for 50% of Test Population
ERG	Emergency Response Guidebook
EU	European Union
Flam.	Flammable
g	Gram(s)
GHS	Globally Harmonized System
h	Hour(s)
Haz.	Hazard
HMIS	Hazardous Materials Identification System
hPa	Hectopascal(s)
hr.	Hour(s)
IARC	International Agency for Research on Cancer
IATA	International Air Transport Association
IBC	Intermediate Bulk Container
ICAO	International Civil Aviation Organization
IMDG	International Maritime Dangerous Goods
IMO	International Maritime Organization
IOELV	Indicative Occupational Exposure Limit Values
Irrit.	Irritation
IUCLID	International Uniform Chemical Information Database
kg	Kilogram(s)
L	Liter(s)
lbs.	pounds
LC50	Lethal Concentration for 50% of Test Population
LC100	Lethal Concentration for 100% of Test Population
LD50	Lethal Dose for 50% of Test Population
Liq.	Liquid
LOEC	Lowest Observed Effect Concentration
LTEL	Long-Term Exposure Limit
m	Meter(s)
MAK	Maximale Arbeitsplatz-Konzentration (Maximum Workplace Concentration)
MARPOL	Maritime Pollution
mfg.	Manufacturer
mg	Milligram(s)
mL	Milliliter(s)
mPa	Millipasacal(s)
Muta.	Germ Cell Mutagenicity
n/a	Not Applicable

NFPA	National Fire Protection Association
NIOSH	National Institute for Occupational Safety and Health
NOEC	No Observed Effect Concentration
NTP	National Toxicology Program
n.o.s.	Not Otherwise Specified
OEL	Occupational Exposure Limits
OSHA	Occupational Safety and Health Administration
Pa	Pascal(s)
PBT	Persistent Bioaccumulative and Toxic
PEL	Permissible Exposure Limit
PNEC	Predicted No Effect Concentration
PPE	Personal Protective Equipment
ppm	Parts Per Million
PVC	Polyvinyl Chloride
Repr.	Reproductive
Respir.	Respiratory
RQ	Reportable Quantities
RTK	Right-to-Know
SDS	Safety Data Sheet
Sens.	Sensitization
STEL	Short-Term Exposure Limit
STOT	Specific Target Organ Toxicity
STOT RE	Specific Target Organ Toxicity, Repeat Exposure
STOT SE	Specific Target Organ Toxicity, Single Exposure
TCC	Tagliabue Closed Cup
THF	Tetrahydrofuran
TLV	Threshold Limit Value
Tox.	Toxicity
TWA	Time Weighted Average
UN	United Nations
US	United States
vPvB	Very Persistent and very Bioaccumulative
WEL	Workplace Exposure Limit
WHMIS	Workplace Hazardous Materials Information System

Revision History:

6.1.2015	Initial SDS Release. SDS provided by mfg. was incorporated into Lonseal's letterhead/layout. Items contained within Section 16, from "DISCLAIMER" and below, are exclusive to Lonseal's version of the SDS.
9.15.2015	SDS updated to match the most recently supplied manufacturer's revision, and added a new product code. Sections revised: 1.1, 2.1, 2.2, 2.3, 3, 4.1, 4.2, 5.2, 6.1, 7.1, 11, 12.1, 15, and 16.
9.6.2016	SDS updated to match the most recently supplied manufacturer's revision. Sections revised: 1, 2, 3, 4.1, 5.1, 6.1, 7, 8.1, 9, 11, 12.1, 14, 15, and 16.
9.9.2016	Title block revised to correctly note "Part B", instead of "Part A".
5.20.2021	SDS formatting updated. Minor grammar and typo corrections. Sections 2, 3, 8, 11, 12, and 15 updated to match most current revision from the manufacturer. HMIS and NFPA symbols replaced the listed values under Section 16. Updated abbreviations list under Section 16.