

Sterling® C 12 Hardener

Version 4

Revision Date 02/24/2016

Print Date 02/24/2016

SECTION 1. IDENTIFICATION

Product name : Sterling® C 12 Hardener

Manufacturer or supplier's details

Company : ELANTAS PDG, INC.
5200 North 2nd Street
St. Louis MO 63147

Telephone : (314) 621-5700

Visit our web site : www.elantas.com

E-mail address : Todd.Thomas@altana.com

Emergency telephone number : INFOTRAC - 1-800-535-5053

Recommended use of the chemical and restrictions on use

Recommended use : Electrical Insulation

Restrictions on use : Refer to Section 15 for any restrictions that may apply

SECTION 2. HAZARDS IDENTIFICATION**GHS Classification**

Acute toxicity (Inhalation) : Category 3

Acute toxicity (Dermal) : Category 2

Skin corrosion : Category 1B

Serious eye damage : Category 1

Respiratory sensitisation : Category 1

Skin sensitisation : Category 1

Germ cell mutagenicity : Category 2

Carcinogenicity : Category 1B

Reproductive toxicity : Category 2

Specific target organ toxicity - single exposure : Category 2 (Respiratory system)

Specific target organ toxicity - single exposure : Category 3 (Respiratory system)

Specific target organ toxicity - repeated exposure : Category 2 (Kidney, Liver, Bladder)

Sterling® C 12 Hardener

Version 4

Revision Date 02/24/2016

Print Date 02/24/2016

GHS Label element

Hazard pictograms



Signal word

: Danger

Hazard statements

: H310 Fatal in contact with skin.
 H314 Causes severe skin burns and eye damage.
 H317 May cause an allergic skin reaction.
 H318 Causes serious eye damage.
 H331 Toxic if inhaled.
 H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.
 H335 May cause respiratory irritation.
 H341 Suspected of causing genetic defects.
 H350 May cause cancer.
 H361 Suspected of damaging fertility or the unborn child.
 H371 May cause damage to organs (Respiratory system).
 H373 May cause damage to organs (Kidney, Liver, Bladder) through prolonged or repeated exposure.

Precautionary statements

: **Prevention:**
 P201 Obtain special instructions before use.
 P202 Do not handle until all safety precautions have been read and understood.
 P260 Do not breathe dust/ fume/ gas/ mist/ vapours/ spray.
 P262 Do not get in eyes, on skin, or on clothing.
 P264 Wash skin 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.
 P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.
 P281 Use personal protective equipment as required.
 P285 In case of inadequate ventilation wear respiratory protection.
Response:
 P301 + P330 + P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
 P303 + P361 + P353 IF ON SKIN (or hair): Remove/ Take off immediately all contaminated clothing. Rinse skin with water/ shower.
 P304 + P340 + P310 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Immediately call a POISON CENTER or doctor/ physician.
 P305 + P351 + P338 + P310 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON

Sterling® C 12 Hardener

Version 4

Revision Date 02/24/2016

Print Date 02/24/2016

CENTER or doctor/ physician.
 P308 + P313 IF exposed or concerned: Get medical advice/
 attention.
 P333 + P313 If skin irritation or rash occurs: Get medical advice/
 attention.
 P363 Wash contaminated clothing before reuse.
Storage:
 P403 + P233 Store in a well-ventilated place. Keep container
 tightly closed.
 P405 Store locked up.
Disposal:
 P501 Dispose of contents/ container to an approved waste
 disposal plant.

Other hazards

None known.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical nature : Aliphatic Amine

Hazardous components

Component	CAS-No.	Concentration (%)
Diethylenetriamine, oxirane polymer	28063-82-3	>= 30 - < 31
Diethylenetriamine	111-40-0	>= 19 - < 20
Bisphenol A	80-05-7	>= 9 - < 10
n-Butyl glycidyl ether	2426-08-6	>= 9 - < 10
Polyethylenepolyamine	Listed	>= 0 - < 1
Polyethylenepolyamine	Listed	>= 0 - < 1

SECTION 4. FIRST AID MEASURES

General advice : Move out of dangerous area.
 Consult a physician.
 Show this safety data sheet to the doctor in attendance.
 Symptoms of poisoning may appear several hours later.
 Do not leave the victim unattended.

If inhaled : Call a physician or poison control centre immediately.
 If unconscious place in recovery position and seek medical
 advice.

In case of skin contact : Immediate medical treatment is necessary as untreated
 wounds from corrosion of the skin heal slowly and with

Sterling® C 12 Hardener

Version 4

Revision Date 02/24/2016

Print Date 02/24/2016

- difficulty.
 Take victim immediately to hospital.
 If on skin, rinse well with water.
 If on clothes, remove clothes.
- In case of eye contact : Small amounts splashed into eyes can cause irreversible tissue damage and blindness.
 In the case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
 Continue rinsing eyes during transport to hospital.
 Remove contact lenses.
 Protect unharmed eye.
 Keep eye wide open while rinsing.
 If eye irritation persists, consult a specialist.
- If swallowed : Keep respiratory tract clear.
 Do NOT induce vomiting.
 Do not give milk or alcoholic beverages.
 Never give anything by mouth to an unconscious person.
 If symptoms persist, call a physician.
 Take victim immediately to hospital.

SECTION 5. FIREFIGHTING MEASURES

- Unsuitable extinguishing media : High volume water jet
- Specific hazards during firefighting : Do not allow run-off from fire fighting to enter drains or water courses.
- Further information : Collect contaminated fire extinguishing water separately. This must not be discharged into drains.
 Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.
- Special protective equipment for firefighters : Wear self-contained breathing apparatus for firefighting if necessary.

SECTION 6. ACCIDENTAL RELEASE MEASURES

- Personal precautions, protective equipment and emergency procedures : Use personal protective equipment.
 Ensure adequate ventilation.
 Evacuate personnel to safe areas.
- Environmental precautions : Prevent product from entering drains.
 Prevent further leakage or spillage if safe to do so.
 If the product contaminates rivers and lakes or drains inform respective authorities.

Sterling® C 12 Hardener

Version 4

Revision Date 02/24/2016

Print Date 02/24/2016

Methods and materials for containment and cleaning up : Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust).
 Keep in suitable, closed containers for disposal.

SECTION 7. HANDLING AND STORAGE

Advice on safe handling : Avoid formation of aerosol.
 Do not breathe vapours/dust.
 Avoid exposure - obtain special instructions before use.
 Avoid contact with skin and eyes.
 For personal protection see section 8.
 Smoking, eating and drinking should be prohibited in the application area.
 Provide sufficient air exchange and/or exhaust in work rooms.
 To avoid spills during handling keep bottle on a metal tray.
 Dispose of rinse water in accordance with local and national regulations.
 Persons susceptible to skin sensitisation problems or asthma, allergies, chronic or recurrent respiratory disease should not be employed in any process in which this mixture is being used.

Conditions for safe storage : Store under conditions specified on the product Technical Data Sheet to maintain product quality.
 Prevent unauthorized access.
 Keep container tightly closed in a dry and well-ventilated place.
 Containers which are opened must be carefully resealed and kept upright to prevent leakage.
 Observe label precautions.
 Electrical installations / working materials must comply with the technological safety standards.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION
Components with workplace control parameters

Components	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
Diethylenetriamine	111-40-0	TWA	1 ppm	ACGIH
			1 ppm 4 mg/m ³	OSHA P0
n-Butyl glycidyl ether	2426-08-6	TWA	3 ppm	ACGIH
			50 ppm 270 mg/m ³	OSHA Z-1
		C	5.6 ppm 30 mg/m ³	NIOSH REL

Sterling® C 12 Hardener

Version 4

Revision Date 02/24/2016

Print Date 02/24/2016

Polyethylenepolyamine	Listed	TWA	1 ppm	ACGIH
		TWA	1 ppm 4.2 mg/m3	OSHA Z-1
CBI - Polyethylenepolyamine (2) 381159	Not Assigned	TWA	1 ppm	
		TWA	1 ppm 4 mg/m3	
Polyethylenepolyamine		TWA	1 ppm	ACGIH
		TWA	1 ppm 4 mg/m3	OSHA P0

Engineering measures : Use with adequate ventilation.
 All application areas should be ventilated in accordance with applicable OSHA regulations. (29 CFR 1910.94)

Personal protective equipment

Respiratory protection : In the case of vapour formation use a respirator with an approved filter.

Hand protection
 Remarks : The suitability for a specific workplace should be discussed with the producers of the protective gloves.

Eye protection : Eye wash bottle with pure water
 Tightly fitting safety goggles
 Wear face-shield and protective suit for abnormal processing problems.

Skin and body protection : Impervious clothing
 Choose body protection according to the amount and concentration of the dangerous substance at the work place.

Hygiene measures : Avoid contact with skin, eyes and clothing.
 When using do not eat or drink.
 When using do not smoke.
 Wash hands before breaks and immediately after handling the product.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance : liquid

Odour Threshold : No data available

pH : No data available

Melting point/freezing point : No data available

Sterling® C 12 Hardener

Version 4

Revision Date 02/24/2016

Print Date 02/24/2016

Initial boiling point and boiling range	: No data available
Flash point	: Greater than 201 °F (94 °C) Method: No information available. Information taken from reference works and the literature.
Evaporation rate	: No data available
Flammability (solid, gas)	: No data available
Upper explosion limit	: No data available
Lower explosion limit	: No data available
Vapour pressure	: No data available
Relative vapour density	: No data available
Relative Density/Specific Gravity	: No data available
Density	: 1.0440 g/cm ³ (77 °F (25 °C))
Solubility(ies)	
Water solubility	: No data available
Solubility in other solvents	: No data available
Partition coefficient: n-octanol/water	: No data available
Auto-ignition temperature	: No data available
Thermal decomposition	: No data available
Viscosity	
Viscosity, dynamic	: No data available
Viscosity, kinematic	: Greater than 22 mm ² /s (104 °F (40 °C))

SECTION 10. STABILITY AND REACTIVITY

Reactivity	: No decomposition if stored and applied as directed.
Chemical stability	: No decomposition if stored and applied as directed.
Possibility of hazardous	: No decomposition if stored and applied as directed.

Sterling® C 12 Hardener

Version 4

Revision Date 02/24/2016

Print Date 02/24/2016

reactions

Conditions to avoid : No data available

Hazardous decomposition products : Carbon monoxide in a fire.
Nitrogen oxides in a fire.
Ammonia**SECTION 11. TOXICOLOGICAL INFORMATION****Information on likely routes of exposure**

Inhalation

Skin contact

Eyes

Acute toxicity**Product:**Acute oral toxicity : Acute toxicity estimate : 4,221 mg/kg
Method: Calculation methodAcute inhalation toxicity : Acute toxicity estimate : 2.44 mg/l
Exposure time: 4 h
Test atmosphere: vapour
Method: Calculation methodAcute dermal toxicity : Acute toxicity estimate : 54.66 mg/kg
Method: Calculation method**Components:****111-40-0 Diethylenetriamine:**

Acute oral toxicity : LD50 (Rat): 1,080 mg/kg

Acute inhalation toxicity : LC50 : Remarks: No data available

Acute dermal toxicity : LD50 (Rabbit): 1,050 mg/kg

2426-08-6 n-Butyl glycidyl ether:

Acute oral toxicity : LD50 (Mouse): 1,530 mg/kg

Acute inhalation toxicity : LC50 (Mouse): 260 ppm
Exposure time: 8.00 h

Acute dermal toxicity : LD50 (Rat): > 2,150 mg/kg

Listed Polyethylenepolyamine:

Acute oral toxicity : LD50 (Rabbit): 5,500 mg/kg

LD50 (Mouse): 38.5 mg/kg

Sterling® C 12 Hardener

Version 4

Revision Date 02/24/2016

Print Date 02/24/2016

LD50 (Rat): 1,080 mg/kg

Acute dermal toxicity : LD50 (Rabbit): 675 mg/kg

Listed Polyethylenepolyamine:

Acute oral toxicity : LD50 (Rat): 2,800 mg/kg

Acute dermal toxicity : LD50 (Rabbit): 550 mg/kg

Skin corrosion/irritation**Product:**

Remarks: Extremely corrosive and destructive to tissue.

Components:**111-40-0 Diethylenetriamine:**

Species: Rabbit

Result: Corrosive to skin

80-05-7 Bisphenol A:

Species: Rabbit

Method: OECD Test Guideline 404

Result: No skin irritation

GLP: yes

2426-08-6 n-Butyl glycidyl ether:

Species: Rabbit

Method: Draize Test

Result: Moderate skin irritation

Serious eye damage/eye irritation**Product:**

Remarks: May cause irreversible eye damage.

Components:**111-40-0 Diethylenetriamine:**

Species: Rabbit

Result: Corrosive to eyes

80-05-7 Bisphenol A:

Species: Rabbit

Result: Risk of serious damage to eyes.

Method: OECD Test Guideline 405

GLP: yes

2426-08-6 n-Butyl glycidyl ether:

Species: Rabbit

Result: Severe eye irritation

Sterling® C 12 Hardener

Version 4

Revision Date 02/24/2016

Print Date 02/24/2016

Method: Draize Test

Respiratory or skin sensitisation**Product:**

Remarks: Causes sensitisation.

Components:**111-40-0 Diethylenetriamine:**

Test Type: Maximisation Test (GPMT)

Exposure routes: Dermal

Species: Guinea pig

Method: OECD Test Guideline 406

Result: May cause sensitisation by skin contact.

GLP: yes

2426-08-6 n-Butyl glycidyl ether:

Remarks: No data available

Carcinogenicity**IARC**

No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

ACGIH

No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.

OSHA

No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

NTP

No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

Further information**Product:**

Remarks: No data available

SECTION 12. ECOLOGICAL INFORMATION**Ecotoxicity****Components:****111-40-0 Diethylenetriamine:**

Sterling® C 12 Hardener

Version 4

Revision Date 02/24/2016

Print Date 02/24/2016

- Toxicity to fish : LC50 (Poecilia reticulata (guppy)): 430 mg/l
Exposure time: 96 h
Test Type: semi-static test
Method: Directive 67/548/EEC, Annex V, C.1.
GLP: yes
- Toxicity to algae : ErC50 (Selenastrum capricornutum (green algae)): 1,164 mg/l
Exposure time: 72 h
Test Type: static test
Method: OECD Test Guideline 201
GLP: yes
- Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC (Daphnia magna (Water flea)): 5.6 mg/l
Exposure time: 21 d
End point: Reproduction
Test Type: semi-static test
GLP: yes

80-05-7 Bisphenol A:

- Toxicity to fish : LC50 (Menidia menidia (Atlantic silverside)): 9.4 mg/l
Exposure time: 96 h
Test Type: flow-through test
Method: OECD Test Guideline 203
GLP: yes

Persistence and degradability**Components:****111-40-0 Diethylenetriamine:**

- Biodegradability : aerobic
Result: Readily biodegradable
Method: OECD Test Guideline 301D
GLP: yes

80-05-7 Bisphenol A:

- Biodegradability : aerobic
Result: Readily biodegradable
Method: OECD Test Guideline 301F
GLP: yes

Bioaccumulative potential**Components:****80-05-7 Bisphenol A:**

- Partition coefficient: n-octanol/water : log Pow: 3.4 (21.5 °C)
pH: 6.4
Method: OECD Test Guideline 107
GLP: yes

Sterling® C 12 Hardener

Version 4

Revision Date 02/24/2016

Print Date 02/24/2016

Mobility in soil

No data available

Other adverse effects

No data available

Product:

Regulation 40 CFR Protection of Environment; Part 82 Protection of Stratospheric Ozone - CAA Section 602 Class I Substances

Remarks This product neither contains, nor was manufactured with a Class I or Class II ODS as defined by the U.S. Clean Air Act Section 602 (40 CFR 82, Subpt. A, App.A + B).

Additional ecological information : No data available

SECTION 13. DISPOSAL CONSIDERATIONS**Disposal methods**

EPA Hazardous Waste Code(s) : D002: Corrosive

Waste from residues : Do not dispose of waste into sewer.
Do not contaminate ponds, waterways or ditches with chemical or used container.
Send to a licensed waste management company.

Contaminated packaging : Empty remaining contents.
Dispose of as unused product.
Do not re-use empty containers.

SECTION 14. TRANSPORT INFORMATION**International Regulation****IATA-DGR**

UN/ID No. : UN 2735
Proper shipping name : Amines, liquid, corrosive, n.o.s.
(Diethylenetriamine)

Class : 8
Packing group : II
Labels : Corrosive
Packing instruction (cargo aircraft) : 855
Packing instruction (passenger aircraft) : 851

IMDG-Code

Sterling® C 12 Hardener

Version 4

Revision Date 02/24/2016

Print Date 02/24/2016

UN number : UN 2735
Proper shipping name : AMINES, LIQUID, CORROSIVE, N.O.S.
(Diethylenetriamine)
Class : 8
Packing group : II
Labels : 8
EmS Code : F-A, S-B
Marine pollutant : no

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable for product as supplied.

National Regulations**49 CFR**

UN/ID/NA number : UN 2735
Proper shipping name : Amines, liquid, corrosive, n.o.s.
(Diethylenetriamine)
Class : 8
Packing group : II
Labels : Corrosive
Marine pollutant : no

SECTION 15. REGULATORY INFORMATION**EPCRA - Emergency Planning and Community Right-to-Know Act****US. EPA CERCLA Hazardous Substances (40 CFR 302)**

Calculated RQ exceeds reasonably attainable upper limit.

SARA 304 - Emergency Release Notification

Calculated RQ exceeds reasonably attainable upper limit.

US. EPA Emergency Planning and Community Right-To-Know Act (EPCRA) SARA Title III Section 302 Extremely Hazardous Substance (40 CFR 355, Appendix A)

Calculated RQ exceeds reasonably attainable upper limit.

SARA 311/312 Hazards : Acute Health Hazard
Chronic Health Hazard

SARA 302 : No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 : This product contains the following toxic chemical(s) subject to the reporting requirements of Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR part 372.

Sterling® C 12 Hardener

Version 4

Revision Date 02/24/2016

Print Date 02/24/2016

Bisphenol A	80-05-7	9 %
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Clean Air Act

This product does not contain any hazardous air pollutants (HAP), as defined by the U.S. Clean Air Act Section 12 (40 CFR 61).

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):

Bisphenol A	80-05-7	9 %
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Non-volatile (Wt) : Refer to the product technical data sheet for VOC information.

US State Regulations**Massachusetts Right To Know**

Diethylenetriamine	111-40-0
Bisphenol A	80-05-7
n-Butyl glycidyl ether	2426-08-6
Phenol	108-95-2

Pennsylvania Right To Know

Diethylenetriamine, oxirane polymer	28063-82-3
Propoxylated Polyethylenepolyamines	Not Assigned
Diethylenetriamine	111-40-0
Bisphenol A	80-05-7
n-Butyl glycidyl ether	2426-08-6
Polyethylenepolyamine epoxy adduct	Not Assigned

New Jersey Right To Know

Diethylenetriamine, oxirane polymer	28063-82-3
Propoxylated Polyethylenepolyamines	Not Assigned
Diethylenetriamine	111-40-0
Bisphenol A	80-05-7
n-Butyl glycidyl ether	2426-08-6

New Jersey Trade Secret Registry Number for the product (NJ TSRN) : NOT APPLICABLE

California Prop 65

WARNING: This product contains a chemical known to the State of California to cause birth defects or other reproductive harm.

Bisphenol A	80-05-7
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Sterling® C 12 Hardener

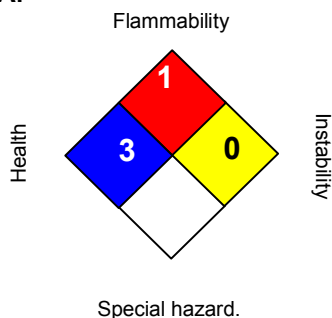
Version 4

Revision Date 02/24/2016

Print Date 02/24/2016

The components of this product are reported in the following inventories:

TSCA	:	We certify that all of the components of this product are either listed on the TSCA Inventory or are not subject to the notification requirements per 40 CFR 720 30(h).
Section 4 / 12(b)	:	Not applicable
Section 5	:	Not applicable
DSL	:	We certify that all of the components of this product are listed on the DSL.

SECTION 16. OTHER INFORMATION
Further information
NFPA:

HMIS III:

HEALTH	3*
FLAMMABILITY	1
PHYSICAL HAZARD	0

0 = not significant, 1 =Slight,
 2 = Moderate, 3 = High
 4 = Extreme, * = Chronic

Revision Date : 02/24/2016

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.