



MERECO

Material Safety Data Sheet

acc. to ISO/DIS 11014

Printing date 08/30/2011

Version 2

Reviewed on 08/30/2011

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

· Product identifier

· Trade name: **Mereco XLN-540 Base Black**

· Application of the substance / the preparation: Epoxy resin

· Details of the supplier of the safety data sheet

· Manufacturer/Supplier: Mereco Division
Metachem Resins Corporation
1505 Main Street
West Warwick, RI 02893
USA Phone +1 / 401 / 822-9300

· Information department: Technical department.
email = info@mereco.com

· Emergency telephone number: Telephone: (401) 822-9300

* 2 Composition/information on ingredients

· Chemical characterization: Mixtures

· Description: Mixture of the substances listed below with non-hazardous additions.

· Components:	
Mineral filler	Xi R36/37/38
Diglycidyl Ether Bisphenol-A epoxy resin	Xi R36/38-43; N R51/53
Reactive diluent	Xn R20/22-40-68; Xi R36/37-43 R52/53 Carc. Cat. 3, Muta. Cat. 3

· Additional information: For the wording of the listed risk phrases refer to section 16.
This resin is a blended mixture of liquid resins and mineral, ceramic or organic fillers. These fillers do not pose airborne hazards to the user of this formulated product because they are completely encapsulated in the resin mass. If any of the specific fillers are hazardous in accordance with Section 313 of the Emergency Planning and Community Right-to-know Act (EPCRA) they are identified in section 15 of this MSDS (SARA Section 313).

* 3 Hazards identification

· Classification of the substance or mixture

· Classification according to Directive 67/548/EEC or Directive 1999/45/EC

Xn; Harmful

R40-68: Limited evidence of a carcinogenic effect. Possible risk of irreversible effects.

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Xi; Irritant

R36/37/38-43: Irritating to eyes, respiratory system and skin. May cause sensitisation by skin contact.

N; Dangerous for the environment

R51/53: Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

· **Information concerning particular hazards for human and environment:**

The product has to be labelled due to the calculation procedure of international guidelines.

· **Classification system:** The classification was made according to the latest editions of international substances lists, and expanded upon from company and literature data.

· **Label elements**

· **Labelling according to EU guidelines:**

The product has been classified and marked in accordance with directives on hazardous materials.

· **Code letter and hazard designation of product:**

Xn Harmful
N Dangerous for the environment

· **Hazard-determining components of labelling:**

Diglycidyl ether Bisphenol-A epoxy resin
reactive diluent (epoxy functional)

· **Risk phrases:**

36/37/38 Irritating to eyes, respiratory system and skin.
40 Limited evidence of a carcinogenic effect.
43 May cause sensitisation by skin contact.
51/53 Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
68 Possible risk of irreversible effects.

· **Safety phrases:**

2 Keep out of the reach of children.
28 After contact with skin, wash immediately with plenty of soap and water.
37/39 Wear suitable gloves and eye/face protection.
61 Avoid release to the environment. Refer to special instructions/safety data sheets.

· **Special labelling of certain preparations:**

Contains epoxy constituents. See information supplied by the manufacturer.

· **Classification system:**

· **NFPA ratings (scale 0 - 4)**

Health = 3
Fire = 1
Reactivity = 0

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- **HMIS-ratings (scale 0 - 4)** Health = 3
Fire = 1
Reactivity = 0

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4 First aid measures

- **After inhalation:** Supply fresh air. For added safety, call a doctor.
In case of unconsciousness place patient in a stable side position for transportation.
- **After skin contact:** Immediately wash with water and soap and rinse thoroughly.
- **After eye contact:** Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor.
- **After swallowing:** If symptoms persist consult doctor.

* 5 Firefighting measures

- **Suitable extinguishing agents:** CO₂, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
- **Special hazards arising from the substance or mixture** No further relevant information available.
- **Protective equipment:** No special measures required.

* 6 Accidental release measures

- **Personal precautions, protective equipment and emergency procedures** Not required.
- **Environmental precautions:** Inform respective authorities in case of seepage into water course or sewage system.
Do not allow to enter sewers/ surface or ground water.
- **Methods and material for containment and cleaning up:** Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
Dispose of contaminated material as waste according to item 13.
Ensure adequate ventilation.
- **Reference to other sections** See Section 7 for information on safe handling.
See Section 8 for information on personal protection equipment.
See Section 13 for disposal information.

* 7 Handling and storage

- **Handling:**
 - **Precautions for safe handling** Store in cool, dry place in tightly closed receptacles.

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- Use only in well ventilated areas.
 - **Information about protection against explosions and fires:** No special measures required.
 - **Storage:**
 - **Requirements to be met by storerooms and receptacles:** No special requirements.
 - **Information about storage in one common storage facility:** Not required.
 - **Further information about storage conditions:** Keep receptacle tightly sealed.
 - **Specific end use(s):** No further relevant information available.
-

* 8 Exposure controls/personal protection

- **Additional information about design of technical systems:** No further data; see item 7.

· Components with limit values that require monitoring at the workplace:	
reactive diluent (epoxy functional)	
PEL	270 mg/m ³ , 50 ppm
REL	Short-term value: C 30* mg/m ³ , C 5.6* ppm *15-min
TLV	16 mg/m ³ , 3 ppm Skin; SEN

- **Additional information:** The lists that were valid during the creation were used as basis.
- **Personal protective equipment:**
 - **General protective and hygienic measures:**
 - Keep away from foodstuffs, beverages and feed.
 - Immediately remove all soiled and contaminated clothing.
 - Wash hands before breaks and at the end of work.
 - Avoid contact with the eyes and skin.
 - **Breathing equipment:** In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use respiratory protective device that is independent of circulating air.
 - **Protection of hands:**
 - Protective gloves
 - The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.
 - Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture.
 - Selection of the glove material is based on consideration of the penetration times, rates of diffusion and the degradation of the material.

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- (Contd. from page 4)
- **Material of gloves** The selection of suitable gloves depends not only on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.
 - **Penetration time of glove material** The exact penetration time has to be determined by the glove manufacturer and has to be observed.
 - **Eye protection:** Tightly sealed goggles
-

* 9 Physical and chemical properties

· General Information	
· Appearance:	
· Form:	Viscous
· Color:	Black
· Odor:	Mild
· Odour threshold:	Not determined.
· pH-value:	Not determined.
· Change in condition	
· Melting point/Melting range:	Undetermined.
· Boiling point/Boiling range:	169°C
· Flash point:	254°C
· Flammability (solid, gaseous):	Not applicable.
· Ignition temperature:	215°C
· Decomposition temperature:	Not determined.
· Auto igniting:	Product is not self-igniting.
· Danger of explosion:	Product does not present an explosion hazard.
· Explosion limits:	
· Lower:	Not determined.
· Upper:	Not determined.
· Vapor pressure at 20°C:	3.5 hPa
· Density at 20°C:	
· Relative density	Not determined.
· Vapour density	Not determined.
· Evaporation rate	Not determined.

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<ul style="list-style-type: none"> · Solubility in / Miscibility with · Water: 	Not miscible or difficult to mix.
<ul style="list-style-type: none"> · Segregation coefficient (n-octanol/water): 	Not determined.
<ul style="list-style-type: none"> · Viscosity: · Dynamic: · Kinematic: 	Not determined. Not determined.
<ul style="list-style-type: none"> · Solvent content: · Organic solvents: · Other information 	0.0 % No further relevant information available.

* 10 Stability and reactivity

- **Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.
 - **Possibility of hazardous reactions** Reacts with amines.
 - **Conditions to avoid** No further relevant information available.
 - **Incompatible materials:** No further relevant information available.
 - **Hazardous decomposition products:** Irritant gases/vapors
-

* 11 Toxicological information

- **Acute toxicity:**

<ul style="list-style-type: none"> · LD/LC50 values that are relevant for classification: 		
reactive diluent (epoxy functional)		
Oral	LD50	2050 mg/kg (rat)
Dermal	LD50	2520 mg/kg (rabbit)
1317-61-9 triiron tetraoxide (iron oxide, black)		
Oral	LD50	>5000 mg/kg (rat)

- **Primary irritant effect:**
 - **on the skin:** Irritant to skin and mucous membranes.
 - **on the eye:** Irritating effect.
 - **Sensitization:** Sensitization possible through skin contact.
 - **Additional toxicological information:** The product shows the following dangers according to internally approved calculation methods for preparations:
Irritant
-

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* 12 Ecological information

- **Aquatic toxicity:** No further relevant information available.
 - **Persistence and degradability** No further relevant information available.
 - **Behavior in environmental systems:**
 - **Bioaccumulative potential** No further relevant information available.
 - **Ecotoxicological effects:**
 - **Remark:** Toxic for fish
 - **Additional ecological information:**
 - **General notes:** Water hazard class 2 (Self-assessment): hazardous for water
Do not allow product to reach ground water, water course or sewage system.
Danger to drinking water if even small quantities leak into the ground.
Also poisonous for fish and plankton in water bodies.
Toxic for aquatic organisms
-

13 Disposal considerations

- **Waste treatment methods**
 - **Recommendation:** Must not be disposed of together with household garbage. Do not allow product to reach sewage system.
 - **Uncleaned packagings:**
 - **Recommendation:** Disposal must be made according to official regulations.
-

* 14 Transport information

· UN-Number · DOT, ADR, ADN, IMDG, IATA	Not Applicable
· UN proper shipping name · DOT · ADR, ADN, IMDG, IATA	Not Regulated Not Applicable
· Transport hazard class(es) · DOT, ADR, ADN, IMDG, IATA · Class	Not Applicable
· Packing group · DOT, ADR, IMDG, IATA	Not Applicable
· Environmental hazards: · Marine pollutant:	Product contains environmentally hazardous substances: Diglycidyl ether Bisphenol-A epoxy resin No

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· Special precautions for user	Not applicable.
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· Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code	Not applicable.
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* 15 Regulatory information

· Sara

· Section 302 (extremely hazardous substances):
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None of the ingredients is listed.

· Section 313 (Specific toxic chemical listings):
--

None of the ingredients is listed by CAS number.
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· Sections 311/312 (Specific hazard chemical listings):
--

reactive diluent (epoxy functional)

· Sections 311/312 Hazard Categorizations:

reactive diluent (epoxy functional)	A = Acute Health Hazard; F = Fire Hazard	3-10%
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· TSCA (Toxic Substances Control Act):

All ingredients are listed.

· Proposition 65

· Chemicals known to cause cancer:

None of the ingredients is listed.

· Chemicals known to cause reproductive toxicity for females:
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None of the ingredients is listed.

· Chemicals known to cause reproductive toxicity for males:
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reactive diluent (epoxy functional)	3-10%
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· Chemicals known to cause developmental toxicity:

None of the ingredients is listed.

· Carcinogenic categories

· EPA (Environmental Protection Agency)
--

None of the ingredients is listed.

· IARC (International Agency for Research on Cancer)

None of the ingredients is listed.

· NTP (National Toxicology Program)
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None of the ingredients is listed.

· TLV (Threshold Limit Value established by ACGIH)

None of the ingredients is listed.

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· MAK (German Maximum Workplace Concentration)		
reactive diluent (epoxy functional)	3B	3-10%
· NIOSH-Ca (National Institute for Occupational Safety and Health)		
None of the ingredients is listed.		
· OSHA-Ca (Occupational Safety & Health Administration)		
None of the ingredients is listed.		

16 Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

- **Relevant phrases**
 - R20/22 Harmful by inhalation and if swallowed.
 - R36/37 Irritating to eyes and respiratory system.
 - R36/37/38 Irritating to eyes, respiratory system and skin.
 - R36/38 Irritating to eyes and skin.
 - R40 Limited evidence of a carcinogenic effect.
 - R43 May cause sensitisation by skin contact.
 - R51/53 Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
 - R52/53 Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
 - R68 Possible risk of irreversible effects.
- **Department issuing MSDS:** Technical department
- **Contact:** Dr. John F. Plummer
- *** Data compared to the previous version altered.**



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

· Product identifier

· Trade name: **Mereco XLN-540 Activator**

· Application of the substance / the preparation
Epoxy curing agent

· Details of the supplier of the safety data sheet

· Manufacturer/Supplier: Mereco Division
Metachem Resins Corporation
1505 Main Street
West Warwick, RI 02893
USA Phone +1 / 401 / 822-9300

· Information department: Technical department.
email = info@mereco.com

· Emergency telephone number: Telephone: (800) 424-9300 (Chemtrec)
Call this number in the event of an accident resulting in a spill, leak or fire. Call this number in the event of exposure to the chemicals.
Telephone: (401) 822-9300

* 2 Composition/information on ingredients

· Chemical characterization: Mixtures

· Description: Mixture of the substances listed below with non-hazardous additions.

· Components:

	Fatty amidoamine resin	C R34; Xi R37/38
68953-36-6	Polyamidoamine resin	C R34; Xi R37/38
112-57-2	3,6,9-triazaundecamethylenediamine	C R34; Xn R21/22; Xi R43; N R51/53

· Additional information: For the wording of the listed risk phrases refer to section 16.

* 3 Hazards identification

· Classification of the substance or mixture

· Classification according to Directive 67/548/EEC or Directive 1999/45/EC

C; Corrosive

R34: Causes burns.

Xi; Irritant

R37-43: Irritating to respiratory system. May cause sensitisation by skin contact.

R52/53: Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

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· **Information concerning particular hazards for human and environment:**

The product has to be labelled due to the calculation procedure of international guidelines.

· **Classification system:**

The classification was made according to the latest editions of international substances lists, and expanded upon from company and literature data.

· **Label elements**

· **Labelling according to EU guidelines:**

The product has been classified and marked in accordance with directives on hazardous materials.

· **Code letter and hazard designation of product:**

C Corrosive

· **Hazard-determining components of labelling:**

3,6,9-triazaundecamethylenediamine
Polyamidoamine resin
Fatty amidoamine resin

· **Risk phrases:**

34 Causes burns.
37 Irritating to respiratory system.
43 May cause sensitisation by skin contact.
52/53 Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

· **Safety phrases:**

20 When using do not eat or drink.
26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
36/37/39 Wear suitable protective clothing, gloves and eye/face protection.
45 In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).
60 This material and its container must be disposed of as hazardous waste.

· **Classification system:**

· **NFPA ratings (scale 0 - 4)**

Health = 3
Fire = 1
Reactivity = 0

· **HMIS-ratings (scale 0 - 4)**

Health = 3
Fire = 1
Reactivity = 0

4 First aid measures

· **General information:**

Immediately remove any clothing soiled by the product.

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- **After inhalation:** Supply fresh air. For added safety, call a doctor.
In case of unconsciousness place patient in a stable side position for transportation.
- **After skin contact:** Immediately wash with water and soap and rinse thoroughly.
- **After eye contact:** Rinse opened eye for several minutes under running water. Then consult a doctor.
- **After swallowing:** Drink copious amounts of water and provide fresh air. Immediately call a doctor.

* 5 Firefighting measures

- **Suitable extinguishing agents:** CO₂, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
- **Special hazards arising from the substance or mixture** No further relevant information available.
- **Protective equipment:** No special measures required.

* 6 Accidental release measures

- **Personal precautions, protective equipment and emergency procedures** Wear protective equipment. Keep unprotected persons away.
- **Environmental precautions:** Inform respective authorities in case of seepage into water course or sewage system.
Do not allow to enter sewers/ surface or ground water.
- **Methods and material for containment and cleaning up:** Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
Use neutralizing agent.
Dispose of contaminated material as waste according to item 13.
Ensure adequate ventilation.
- **Reference to other sections** See Section 7 for information on safe handling.
See Section 8 for information on personal protection equipment.
See Section 13 for disposal information.

* 7 Handling and storage

- **Handling:**
 - **Precautions for safe handling** Store in cool, dry place in tightly closed receptacles.
Use only in well ventilated areas.
 - **Information about protection against explosions and fires:** No special measures required.

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- **Storage:**
 - **Requirements to be met by storerooms and receptacles:** No special requirements.
 - **Information about storage in one common storage facility:** Not required.
 - **Further information about storage conditions:** Keep receptacle tightly sealed.
 - **Specific end use(s)** No further relevant information available.
-

* 8 Exposure controls/personal protection

- **Additional information about design of technical systems:** No further data; see item 7.

· Components with limit values that require monitoring at the workplace:	
112-57-2 3,6,9-triazaundecamethylenediamine	
WEEL	5 mg/m ³ Skin; DSEN

- **Additional information:** The lists that were valid during the creation were used as basis.

- **Personal protective equipment:**

- **General protective and hygienic measures:**

Keep away from foodstuffs, beverages and feed.
Immediately remove all soiled and contaminated clothing.
Wash hands before breaks and at the end of work.
Avoid contact with the eyes and skin.

- **Breathing equipment:**

In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use respiratory protective device that is independent of circulating air.

- **Protection of hands:**

Protective gloves

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.
Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture. Selection of the glove material is based on consideration of the penetration times, rates of diffusion and the degradation of the material.

- **Material of gloves**

The selection of suitable gloves depends not only on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.

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- **Penetration time of glove material** The exact penetration time has to be determined by the glove manufacturer and has to be observed.
 - **Eye protection:** Tightly sealed goggles
-

* 9 Physical and chemical properties

· General Information	
· Appearance:	
· Form:	Liquid
· Color:	Amber colored
· Odor:	Ammonia-like
· Odour threshold:	Not determined.
· pH-value:	Not determined.
· Change in condition	
· Melting point/Melting range:	Undetermined.
· Boiling point/Boiling range:	> 277°C
· Flash point:	> 110°C
· Flammability (solid, gaseous):	Not applicable.
· Ignition temperature:	335.0°C
· Decomposition temperature:	Not determined.
· Auto igniting:	Product is not self-igniting.
· Danger of explosion:	Product does not present an explosion hazard.
· Explosion limits:	
· Lower:	Not determined.
· Upper:	Not determined.
· Vapor pressure:	Not determined.
· Density at 20°C:	0.94 g/cm ³
· Relative density	Not determined.
· Vapour density	Not determined.
· Evaporation rate	Not determined.
· Solubility in / Miscibility with	
· Water:	Not miscible or difficult to mix.
· Segregation coefficient (n-octanol/water): Not determined.	
· Viscosity:	
· Dynamic:	Not determined.
· Kinematic:	Not determined.

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· Solvent content:	
· Organic solvents:	0.0 %
· Other information	No further relevant information available.

* 10 Stability and reactivity

· Thermal decomposition / conditions to be avoided:	No decomposition if used according to specifications.
· Possibility of hazardous reactions	Reacts with acids. Reacts with strong acids.
· Conditions to avoid	No further relevant information available.
· Incompatible materials:	No further relevant information available.
· Hazardous decomposition products:	Nitrogen oxides Irritant gases/vapors

* 11 Toxicological information

· **Acute toxicity:**

· **LD/LC50 values that are relevant for classification:**

112-57-2 3,6,9-triazaundecamethylenediamine

Dermal | LD50 | 660 mg/kg (rabbit)

· **Primary irritant effect:**

· on the skin:	Caustic effect on skin and mucous membranes.
· on the eye:	Strong caustic effect.
· Sensitization:	Sensitization possible through skin contact.
· Additional toxicological information:	The product shows the following dangers according to internally approved calculation methods for preparations: Corrosive Irritant Swallowing will lead to a strong caustic effect on mouth and throat and to the danger of perforation of esophagus and stomach.

* 12 Ecological information

· Aquatic toxicity:	No further relevant information available.
· Persistence and degradability	No further relevant information available.
· Behavior in environmental systems:	
· Bioaccumulative potential	No further relevant information available.

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- **Ecotoxicological effects:**
 - **Remark:** Harmful to fish
 - **Additional ecological information:**
 - **General notes:** Water hazard class 2 (Self-assessment): hazardous for water
Do not allow product to reach ground water, water course or sewage system.
Must not reach bodies of water or drainage ditch undiluted or unneutralized.
Danger to drinking water if even small quantities leak into the ground.
Harmful to aquatic organisms
-

13 Disposal considerations

- **Waste treatment methods**
 - **Recommendation:** Must not be disposed of together with household garbage. Do not allow product to reach sewage system.
 - **Uncleaned packagings:**
 - **Recommendation:** Disposal must be made according to official regulations.
-

* 14 Transport information

· UN-Number · DOT, ADR, ADN, IMDG, IATA	Not Applicable
· UN proper shipping name · DOT · ADR, ADN, IMDG, IATA	Not Regulated Not Applicable
· Transport hazard class(es) · DOT, ADR, ADN, IMDG, IATA · Class	Not Applicable
· Packing group · DOT, ADR, IMDG, IATA	Not Applicable
· Environmental hazards: · Marine pollutant:	No
· Special precautions for user	Not applicable.
· Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code	Not applicable.

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- **Transport/Additional information:**
- **Item:**

* 15 Regulatory information

· Sara

· **Section 302 (extremely hazardous substances):**

None of the ingredients is listed.

· **Section 313 (Specific toxic chemical listings):**

None of the ingredients is listed by CAS number.

· **Sections 311/312 (Specific hazard chemical listings):**

All ingredients are listed.

· **Sections 311/312 Hazard Categorizations:**

68953-36-6	Polyamidoamine resin	A = Acute Health Hazard	40-60%
68991-84-4	Fatty amidoamine resin	A = Acute Health Hazard	40-60%
112-57-2	3,6,9-triazaundecamethylenediamine	A = Acute, C = Chronic (health hazards)	3-10%

· **TSCA (Toxic Substances Control Act):**

All ingredients are listed.

· **Proposition 65**

· **Chemicals known to cause cancer:**

None of the ingredients is listed.

· **Chemicals known to cause reproductive toxicity for females:**

None of the ingredients is listed.

· **Chemicals known to cause reproductive toxicity for males:**

None of the ingredients is listed.

· **Chemicals known to cause developmental toxicity:**

None of the ingredients is listed.

· **Carcinogenic categories**

· **EPA (Environmental Protection Agency)**

None of the ingredients is listed.

· **IARC (International Agency for Research on Cancer)**

None of the ingredients is listed.

· **NTP (National Toxicology Program)**

None of the ingredients is listed.

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—USA—

Material Safety Data Sheet

acc. to ISO/DIS 11014

Printing date 08/30/2011

Version 2

Reviewed on 08/30/2011

Trade name: Mereco XLN-540 Activator

(Contd. from page 8)

· TLV (Threshold Limit Value established by ACGIH)
None of the ingredients is listed.
· MAK (German Maximum Workplace Concentration)
None of the ingredients is listed.
· NIOSH-Ca (National Institute for Occupational Safety and Health)
None of the ingredients is listed.
· OSHA-Ca (Occupational Safety & Health Administration)
None of the ingredients is listed.

* 16 Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

- **Relevant phrases**
 - R21/22 Harmful in contact with skin and if swallowed.
 - R34 Causes burns.
 - R37/38 Irritating to respiratory system and skin.
 - R43 May cause sensitisation by skin contact.
 - R51/53 Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
- **Department issuing MSDS:** Technical department
- **Contact:** Dr. John F. Plummer
- *** Data compared to the previous version altered.**

— USA —