

Printing date 11/16/2016

Reviewed on 11/16/2016

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

- **Product identifier**
- **Trade name:** *X-Link Crosslinker for C-808 & Antistat-268*
- **Application of the substance / the mixture:** *Crosslinker*
- **Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:**  
*Applied Ink Solutions  
17 Hampshire Drive, Unit 8  
Hudson, NH 03051*
- **Information department:**  
*Product Safety  
Email: [sales@appliedinksolutions.com](mailto:sales@appliedinksolutions.com)*
- **Emergency telephone number:**  
*Chemtrec USA Emergency : 800-424-9300  
Chemtrec International Emergency : 703-527-3887  
Applied Ink Solutions : 603-595-6221*

## 2 Hazard(s) identification

- **Classification of the substance or mixture:**



GHS08 Health hazard

Carc. 2 H351 Suspected of causing cancer.



GHS07

Eye Irrit. 2A H319 Causes serious eye irritation.

- **Label elements**

- **GHS label elements:**

*The substance is classified and labeled according to the Globally Harmonized System (GHS).*

- **Hazard pictograms:**



GHS07



GHS08

- **Signal word:** *Warning*

- **Hazard-determining components of labeling:**

*Polyfunctional Aziridine*

- **Hazard statements:**

*H319 Causes serious eye irritation.*

*H351 Suspected of causing cancer.*

- **Precautionary statements:**

*P261 Avoid breathing dust/fume/gas/mist/vapors/spray.*

*P280 Wear protective gloves/protective clothing/eye protection/face protection.*

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- P301+P310 *IF SWALLOWED: Immediately call a POISON CENTER/ doctor.*  
P305+P351+P338 *If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.*  
P304+P312 *IF INHALED: Call a POISON CENTER/doctor if you feel unwell.*  
P333+P313 *If skin irritation or rash occurs: Get medical advice/attention.*  
P337+P313 *If eye irritation persists: Get medical advice/attention.*  
P302+P352 *IF ON SKIN: Wash with plenty of soap and water.*  
P403+P233 *Store in a well-ventilated place. Keep container tightly closed.*  
P501 *Dispose of contents/container in accordance with local/regional/national/international regulations.*

· **Classification system**

· **NFPA ratings (scale 0 - 4):**



· **HMIS-ratings (scale 0 - 4):**

HEALTH	2	Health = 2
FIRE	1	Fire = 1
REACTIVITY	0	Reactivity = 0

· **Other hazards**

· **Results of PBT and vPvB assessment**

· **PBT:** Not applicable.

· **vPvB:** Not applicable.

### 3 Composition/information on ingredients

CAS No.	Description	%
57116-45-7	Polyfunctional Aziridine ⚠ Carc. 2, H351; ⚠ Eye Irrit. 2A, H319	>95%
151-56-4	Ethyleneimine ⚠ Flam. Liq. 2, H225; ⚠ Acute Tox. 2, H300; Acute Tox. 1, H310; Acute Tox. 2, H330; ⚠ Muta. 1B, H340; Carc. 1B, H350; ⚠ Skin Corr. 1B, H314; ⚠ Aquatic Chronic 2, H411	<.001%

### 4 First-aid measures

· **Description of first aid measures**

· **General information:**

*Immediately remove any clothing soiled by the product.*

*Symptoms of poisoning may even occur after several hours; therefore medical observation for at least 48 hours after the accident.*

· **After inhalation:** Supply fresh air; consult doctor in case of complaints.

· **After skin contact:** Generally the product does not irritate the skin.

· **After eye contact:**

*Wash eyes immediately with a large amount of water or normal saline, occasionally lifting upper and lower eye lids until no evidence of chemical remains (about 20 minutes). Remove contact lenses if present and easy to remove. Seek immediate medical attention.*

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- **After swallowing:**  
*Do not induce vomiting unless instructed to do so by a physician. Wash out mouth with water and keep person at rest. Seek immediate medical attention.*
- **Information for doctor:**
- **Most important symptoms and effects, both acute and delayed:** *No further relevant information available.*
- **Indication of any immediate medical attention and special treatment needed:** *Treat symptomatically.*

## 5 Fire-fighting measures

- **Extinguishing media**
- **Suitable extinguishing agents:**  
*Alcohol resistant foam*  
*Fire-extinguishing powder*  
*ABC powder*
- **For safety reasons unsuitable extinguishing agents:** *Water with full jet*
- **Special hazards arising from the substance or mixture:** *No further relevant information available.*
- **Advice for firefighters**
- **Protective equipment:** *Wear SCBA.*

## 6 Accidental release measures

- **Personal precautions, protective equipment and emergency procedures:**  
*Wear protective equipment. Keep unprotected persons away.*  
*Ensure adequate ventilation.*
- **Environmental precautions:**  
*Dilute with plenty of water.*  
*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).*  
*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:**  
*Ensure good ventilation/exhaust at the workplace.*  
*Prevent formation of aerosols.*
- **Information about protection against explosions and fires:**  
*Keep ignition sources away - Do not smoke.*  
*Protect against electrostatic charges.*
- **Conditions for safe storage, including any incompatibilities**
- **Storage**
- **Requirements to be met by storerooms and containers:** *No special requirements.*
- **Information about storage in one common storage facility:** *Store away from oxidizing agents.*
- **Further information about storage conditions:**  
*Keep container well-sealed in cool, dry location.*  
*Protect from heat and direct sunlight.*

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- Store receptacle in a well ventilated area.
- **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.
- **Control parameters**
- **Components with limit values that require monitoring at the workplace:** Not required.
- **Additional information:** The lists that were valid during the creation were used as basis.
- **Exposure controls**
- **Personal protective equipment**
- **General protective and hygienic measures:**
  - Keep away from food and beverages.
  - Immediately remove all soiled and contaminated clothing.
  - Wash hands before breaks and at the end of work.
  - Avoid contact with the eyes.
  - Avoid contact with the eyes and skin.
- **Respiratory equipment:**
  - In case of low exposure, use cartridge respirator. In case of intensive or longer exposure, use SCBA.
- **Protection of hands:**



Protective gloves

- The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.
- **Material of gloves:** Nitrile rubber, NBR
- **Penetration time of glove material:** Contact glove manufacture for break-through time.
- **Eye protection:**



Tightly sealed goggles

## 9 Physical and chemical properties

- **Information on basic physical and chemical properties**
- **General Information**
- **Appearance**

<b>Form:</b>	Liquid
<b>Color:</b>	Light yellow
<b>Odor:</b>	Slight amine
<b>Odor threshold:</b>	Not determined.
- **pH-value:** Not determined.
- **Change in condition**

<b>Melting point/Melting range:</b>	205.47 °C (402 °F)
<b>Boiling point/Boiling range:</b>	484.73 °C (905 °F)
- **Flash point:** 113 °C (235 °F)

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· <b>Flammability (solid, gaseous):</b>	Not applicable.
· <b>Ignition temperature</b>	
· <b>Decomposition temperature:</b>	Not determined.
· <b>Auto igniting:</b>	Not determined.
· <b>Danger of explosion:</b>	Product does not present an explosion hazard.
· <b>Explosion limits:</b>	
<b>Lower:</b>	Not determined.
<b>Upper:</b>	Not determined.
· <b>Vapor pressure:</b>	Not determined.
· <b>Density at 20 °C (68 °F):</b>	1.18 g/cm <sup>3</sup> (9.847 lbs/gal)
· <b>Relative density:</b>	Not determined.
· <b>Vapor density:</b>	Not determined.
· <b>Evaporation rate:</b>	1.6-2.3 (BuAc=1)
· <b>Solubility in / Miscibility with Water:</b>	Fully miscible.
· <b>Partition coefficient (n-octanol/water):</b>	Not determined.
· <b>Viscosity</b>	
<b>Dynamic:</b>	Not determined.
<b>Kinematic:</b>	Not determined.
<b>Organic solvents:</b>	0.0 %
· <b>Other information:</b>	No further relevant information available.

## 10 Stability and reactivity

- **Reactivity:** No further relevant information available.
- **Chemical stability:** Stable at normal temperature and pressure.
- **Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.
- **Possibility of hazardous reactions:** No dangerous reactions known.
- **Conditions to avoid:**  
Heat, flames and sparks. Extremes of temperature and direct sunlight.  
Contact with incompatible materials.
- **Incompatible materials:** Strong oxidizing agents
- **Hazardous decomposition products:**  
Carbon monoxide and carbon dioxide  
Nitrogen oxides (NO<sub>x</sub>)

## 11 Toxicological information

- **Information on toxicological effects**
- **Acute toxicity:**
- **Primary irritant effect**
- **On the skin:** No irritant effect.
- **On the eye:** Irritating effect.
- **Sensitization:** No sensitizing effects known.

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· **Additional toxicological information**

· **Carcinogenic categories**

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

151-56-4 Ethyleneimine

2B

· **NTP (National Toxicology Program):**

Substance is not listed.

· **OSHA-Ca (Occupational Safety & Health Administration):**

151-56-4 Ethyleneimine

## 12 Ecological information

· **Toxicity**

· **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.

· **Mobility in soil:** No further relevant information available.

· **Additional ecological information:**

· **General notes:**

Water hazard class 1 (Self-assessment): slightly hazardous for water

Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.

· **Results of PBT and vPvB assessment**

· **PBT:** Not applicable.

· **vPvB:** Not applicable.

· **Other adverse effects:** No further relevant information available.

## 13 Disposal considerations

· **Waste treatment methods**

· **Recommendation:**

Must not be disposed of as regular garbage/trash. Do not allow product to reach sewage system.

Disposal must be made in accordance with Federal, State, and Local regulations.

· **Uncleaned packagings**

· **Recommendation:** Disposal must be made in accordance with Federal, State, and Local regulations.

· **Recommended cleansing agent:** Water, if necessary with cleansing agents.

## 14 Transport information

· **UN-Number**

· **DOT, ADR, ADN, IMDG, IATA:** Not regulated.

· **UN proper shipping name**

· **DOT, ADR, ADN, IMDG, IATA:** Not regulated.

· **Transport hazard class(es)**

· **DOT, ADR, ADN, IMDG, IATA**

· **Class:** Not regulated.

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- |                                                                                   |                 |
|-----------------------------------------------------------------------------------|-----------------|
| · <b>Packing group</b>                                                            |                 |
| · <b>DOT, ADR, IMDG, IATA:</b>                                                    | Not regulated.  |
| · <b>Environmental hazards:</b>                                                   | Not applicable. |
| · <b>Special precautions for user:</b>                                            | Not applicable. |
| · <b>Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code:</b> | Not applicable. |
| · <b>UN "Model Regulation":</b>                                                   | Not regulated.  |

### 15 Regulatory information

- Safety, health and environmental regulations/legislation specific for the substance or mixture
- Sara

- **Section 355 (extremely hazardous substances):**

151-56-4 Ethyleneimine

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

151-56-4 Ethyleneimine

- **TSCA (Toxic Substances Control Act):**  
All ingredients are listed or comply with TSCA regulations.

- **Proposition 65**

- **Chemicals known to cause cancer:**

151-56-4 Ethyleneimine

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

Substance is not listed.

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

Substance is not listed.

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

Substance is not listed.

- **Carcinogenic categories**

- **EPA (Environmental Protection Agency):**

Substance is not listed.

- **TLV (Threshold Limit Value established by ACGIH)**

151-56-4 Ethyleneimine

A3

- **NIOSH-Ca (National Institute for Occupational Safety and Health):**

151-56-4 Ethyleneimine

- **Massachusetts State Right To Know List:**

151-56-4 Ethyleneimine

- **New Jersey State Right To Know List:**

57116-45-7 Polyfunctional Aziridine

- **Pennsylvania Hazardous Substances List:**

57116-45-7 Polyfunctional Aziridine

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151-56-4 Ethyleneimine

· **California SCAQMD Rule 443.1 VOC's:** No information available.

· **GHS label elements:**

The substance is classified and labeled according to the Globally Harmonized System (GHS).

· **Hazard pictograms:**



GHS07 GHS08

· **Signal word:** Warning

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

Polyfunctional Aziridine

· **Hazard statements:**

H319 Causes serious eye irritation.

H351 Suspected of causing cancer.

· **Precautionary statements:**

P261 Avoid breathing dust/fume/gas/mist/vapors/spray.

P280 Wear protective gloves/protective clothing/eye protection/face protection.

P301+P310 IF SWALLOWED: Immediately call a POISON CENTER/ doctor.

P305+P351+P338 If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P304+P312 IF INHALED: Call a POISON CENTER/doctor if you feel unwell.

P333+P313 If skin irritation or rash occurs: Get medical advice/attention.

P337+P313 If eye irritation persists: Get medical advice/attention.

P302+P352 IF ON SKIN: Wash with plenty of soap and water.

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

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

· **Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

## 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.

· **Department issuing SDS:** Product safety department

· **Contact:** Mr. Cole

· **Revision History:** New SDS

· **Date of preparation / last revision** 11/16/2016

· **Abbreviations and acronyms:**

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)

IMDG: International Maritime Code for Dangerous Goods

DOT: US Department of Transportation

IATA: International Air Transport Association

ACGIH: American Conference of Governmental Industrial Hygienists

CAS: Chemical Abstracts Service (division of the American Chemical Society)

NFPA: National Fire Protection Association (USA)

HMIS: Hazardous Materials Identification System (USA)

PBT: Persistent, Bioaccumulative and Toxic

vPvB: very Persistent and very Bioaccumulative

NIOSH: National Institute for Occupational Safety

OSHA: Occupational Safety & Health

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*TLV: Threshold Limit Value**PEL: Permissible Exposure Limit**REL: Recommended Exposure Limit**Eye Irrit. 2A: Serious eye damage/eye irritation, Hazard Category 2A**Carc. 2: Carcinogenicity, Hazard Category 2*

US

**RoHs 2 2011/65/EU along with EU Directive 2022/19/EU- Waste from Electrical and Electronic Equipment (WEEE):**

Applied Ink Solutions products do not exceed the amount of allowable levels concerning: Cadmium (Cd); Hexavalent Chromium (CrVI); Mercury (Hg); Lead (Pb); Polybrominated Biphenyls (PBBs) as bromide; Polybrominated Diphenyl Ethers (PBDEs) as bromide, decaBDE.

Applied Ink Solutions has confirmed with our precious metal suppliers that they do not use conflict minerals, as outlined in the **Dodd-Frank Wall Street Reform and Consumer Protection Act in Title XV, Section 1502.**