SAFETY DATA SHEET
This SDS complies with REACH 1907/2006 and 2001/80/EC, GHS, OSHA 29CFR 1910.1200

Section 1: Chemical Product and Company Identification

MANUFACTURER’S NAME
Advantage Coatings Technology
1533 Arthur Avenue
Unit B
Louisville, Colorado 80027-3054

EMERGENCY TELEPHONE
Chemtrec U.S.-Canada: 800-424-9300
Chemtrec International: 703-527-3887
Information: 303-499-1310
Fax: 720-536-8365

Safety Data Sheet Competent Person: info@actfinish.com
Kevin Durling

DATE PREPARED: April 18, 2014 REVISION DATE: April 18, 2014

PRODUCT NAME: X - LINKER
FORMULA: Preparation/Mixture
PRODUCT USE: Crosslinker

Section 2: Hazards Identification

Regulation (EC) No 1272/2008

GHS Hazard Class
Eye Corrosive Category 1
Sensitization Skin — Category 1
Skin Irritation — Category 2
Sensitization Respiratory — Category 1

Signal word: Danger

Hazard Statement:
Causes serious eye damage
May cause allergy or asthma symptoms or breathing difficulties if inhaled.
May cause allergic skin reaction.

Precautionary Statements:
Prevention
Wear eye protection /face protection.
Avoid breathing dust/smoke/gas/mist/vapours/spray.
In case of inadequate ventilation wear respiratory protection.
If INHALED: remove person to fresh air and keep comfortable for breathing.
If experiencing respiratory symptoms: Call a POISON Center or doctor.
Contaminated work clothing should not be allowed out of the workplace.
Wear protective gloves.
Wash hands thoroughly after handling.

Response
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
If ON SKIN: Wash with plenty of water.
If skin irritation or rash occurs: Get medical advice/attention.
Take off contaminated clothing and wash it before reuse.
Immediately call a POISON CENTER or doctor/physician.

Storage
No Precautionary statement

Disposal
Waste from Residues and Unused Products: Follow the waste disposal requirements of your country, state, or local authorities.

HAZARD CLASSIFICATION: Not classified as hazardous based on IATA, IMDG, and DOT.
FIRE AND EXPLOSION: Not considered flammable or combustible, but this product will burn if involved in a fire.
POTENTIAL HEALTH EFFECTS: <0% of mixture consists of ingredients of unknown acute toxicity
INGESTION: Slightly toxic by ingestion.
HAZARD CLASSIFICATION: Not classified as hazardous based on IATA, IMDG, and DOT.

FIRE AND EXPLOSION: Not considered flammable or combustible, but this product will burn if involved in a fire.

POTENTIAL HEALTH EFFECTS: <0% of mixture consists of ingredients of unknown acute toxicity

INGESTION: Slightly toxic by ingestion.

INHALATION: May be harmful if inhaled. Causes respiratory tract irritation.

SKIN CONTACT: May cause slight irritation. May cause sensitization of susceptible persons.

EYE CONTACT: Causes irritation with symptoms of reddening, tearing, stinging, and swelling. May cause corneal injury

OTHER: Monomeric aziridines (ethyleneimine and propyleneimine) used to produce polyfunctional aziridine crosslinkers have shown positive genotoxic activity in all animal and bacterial systems tested and are known animal carcinogens, with unknown relevance to humans. Animal and bacterial studies on the crosslinker show a similar pattern of genotoxicity. Bioavailability of the crosslinker is less than the monomer, however, care should be taken to avoid exposure.

CHRONIC EFFECTS OF OVEREXPOSURE: None

APPEARANCE: Clear liquid

NFPA Rating:

<table>
<thead>
<tr>
<th>Component</th>
<th>Health (Blue)</th>
<th>Flammability (Red)</th>
<th>Reactivity (Yellow)</th>
<th>Special (White)</th>
</tr>
</thead>
<tbody>
<tr>
<td>X - Linker</td>
<td>3</td>
<td>1</td>
<td>0</td>
<td>--</td>
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</table>

Section 3: Composition, Information on Ingredients

<table>
<thead>
<tr>
<th>PRODUCT COMPOSITION</th>
<th>APPRX %</th>
<th>ACGIH TLV</th>
<th>OSHA PEL</th>
<th>NIOSH REL</th>
<th>CAS NO.</th>
<th>EINECS/ELINCS</th>
<th>DANGER SYMBOL</th>
<th>RISK PHRASE</th>
<th>DSL CANADA</th>
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<tbody>
<tr>
<td>Polyfunctional Aziridine</td>
<td>70-100</td>
<td>2 ppm</td>
<td>2 ppm 5 mg/m³</td>
<td>2 ppm 5 mg/m³</td>
<td>64265-57-2</td>
<td>-</td>
<td>-----</td>
<td>-----</td>
<td>Y</td>
</tr>
<tr>
<td>P series glycol ethers</td>
<td>0-30</td>
<td>100 ppm</td>
<td>100 ppm STEL</td>
<td>34590-94-8</td>
<td>252-104-2</td>
<td>-----</td>
<td>-----</td>
<td>Y</td>
<td></td>
</tr>
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</table>

Trade Secret (TS) Some items on this MSDS may be designated as trade secrets. Bonafide requests for disclosure of trade secret information to medical personnel must be made in accordance with the provisions contained in 29 CFR 1910.1200 I 1-13. The full text for all R-Phrases is shown in Section 16.

Section 4: First Aid Measures

INHALATION: Remove to fresh air. If not breathing, provide CPR (cardio pulmonary resuscitation). Get immediate medical attention.

SKIN CONTACT: Immediately flush skin with plenty of soap and water for at least 15 minutes. Remove contaminated clothing.

EYE CONTACT: Immediately flush eyes with plenty of water for at least 15 minutes. Get immediate medical attention.

INGESTION: If swallowed do not induce vomiting, give large quantities of water to drink. Never give anything to an unconscious person. Get immediate medical attention.

Section 5: Fire-fighting Measures

FLASH POINT: 93-94 °C; 199 °F

FLAMMABLE LIMITS IN AIR (% by vol): Not measured

EXTINGUISHING MEDIA: Foam, Dry Chemical Powder, or Carbon Dioxide

SPECIAL FIREFIGHTING PROCEDURES: None

UNUSUAL FIRE AND EXPLOSION HAZARDS: Emits toxic fumes under fire conditions.

Section 6: Accidental Release Measures

ACTION TO BE TAKEN IF MATERIAL IS RELEASED OR SPILLED:

- Wear proper protective equipment as specified in Section 8: Exposure Controls/Personal Protection
- Warn other workers of spill and contain spill.
- Recover spill by using absorbent and sweeping up waste material.
- In case of large spills, dike the spill, if possible. Call emergency services.
- Place material into a chemical waste container.
- Eliminate all sources of ignition and ventilate area.
- Prevent spills or contaminated rinse water from entering sewers or watercourses.

DISPOSAL METHOD: disposal should be made in accordance with federal, state, and local regulations. Incineration is recommended.

Section 7: Handling and Storage
DISPOSAL METHOD: disposal should be made in accordance with federal, state, and local regulations. Incineration is recommended.

Section 7: Handling and Storage

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE:
Store upright in a cool, dry place.
Keep container closed when not in use.
Prevent build-up of electro-static charges (e.g. by grounding).
Keep away from heat, sparks, flame, direct sunlight and other possible sources of ignition.
Do not store with peroxides and oxidizing materials.
Use only with adequate ventilation.
Do not inhale vapors.
Avoid spilling and releasing vapor.
Wear proper protective equipment when handling this material.
Avoid contact with skin, eyes or clothing.
Wash hands and face after handling this material.
Keep out of reach of children.
Follow all applicable local regulations for handling and storage.
Utilize chemical segregation.

INFORMATION ON EMPTIED CONTAINER
Dispose of this container according to local, state, and federal laws in your country.
Do not reuse this container. This container may be hazardous when emptied.
Residues will be explosive or flammable.
Do not puncture or cut this container.
Do not weld on or near this container.

SPECIFIC USES:
This product is intended for use as a crosslinker.

Section 8: Exposure Controls/Personal Protection

VENTILATION: Always provide good general, mechanical room ventilation where this chemical/material is used.
SPECIAL VENTILATION CONTROLS: Use this material inside totally enclosed equipment, or use it with local exhaust ventilation at points where vapors can be released into the workspace air.
RESPIRATORY PROTECTION: Follow the OSHA respirator regulations found in 29 CFR 1910.134 or the CEN European Standards (EU). Use a NIOSH/MSHA or European Standard (EN) approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.
PROTECTIVE GLOVES: Neoprene, butyl, or nitrile rubber gloves are recommended.
EYE PROTECTION: Recommend eye protection using safety glasses or goggles.
SKIN PROTECTION: Suitable protective clothing to prevent skin contact
WORK/HYGIENE PRACTICES: Avoid breathing vapor. Avoid contact with eyes. Wash hands after handling.
EXPOSURE LIMITS: Reference Section 2
OTHER EQUIPMENT: Make safety shower, eyewash stations, and hand washing equipment available in the work area.

Section 9: Physical and Chemical Properties

APPEARANCE - COLOR: Clear to amber
PHYSICAL STATE: Liquid
ODOR: Mild solvent

<table>
<thead>
<tr>
<th>PRODUCT CRITERIA</th>
<th>PRODUCT CRITERIA</th>
</tr>
</thead>
<tbody>
<tr>
<td>ODOR THRESHOLD</td>
<td>Not applicable for product</td>
</tr>
<tr>
<td>PH</td>
<td>Basic</td>
</tr>
<tr>
<td>FLASH POINT:</td>
<td>93-94 ºC, 199 ºF</td>
</tr>
<tr>
<td>LOWER EXPLOSIVE LIMIT; UPPER EXPLOSIVE LIMIT</td>
<td>Not applicable for product</td>
</tr>
<tr>
<td>FLAMMABILITY (Solid, gas)</td>
<td>Not flammable</td>
</tr>
<tr>
<td>EXPLOSIVE PROPERTIES</td>
<td>Not applicable for product</td>
</tr>
<tr>
<td>OXIDIZING PROPERTIES</td>
<td>May occur</td>
</tr>
<tr>
<td>SPECIFIC GRAVITY (@25 ºC)</td>
<td>1.07</td>
</tr>
<tr>
<td>EVAPORATION RATE</td>
<td>Less than n-butyl acetate</td>
</tr>
<tr>
<td>% VOLATILE by VOLUME</td>
<td>0-30</td>
</tr>
<tr>
<td>PARTITION COEFFICIENT</td>
<td>Not applicable for product</td>
</tr>
<tr>
<td>AUTO IGNITION TEMPERATURE</td>
<td>Not applicable for product</td>
</tr>
<tr>
<td>DECOMPOSITION TEMPERATURE</td>
<td>Not applicable for product</td>
</tr>
<tr>
<td>BOILING POINT:</td>
<td>Not applicable for product</td>
</tr>
</tbody>
</table>
PARTITION COEFFICIENT: Not applicable for product.
AUTO IGNITION TEMPERATURE: Not applicable for product.
DECOMPOSITION TEMPERATURE: Not applicable for product.
BOILING POINT: Not applicable for product.
MELTING POINT: >212 °F
VAPOR PRESSURE: Negligible
VAPOR DENSITY (AIR = 1): Heavier than air
SOLUBILITY IN WATER: Miscible
WATER SOLUBILITY IN THE SOLVENT: Miscible
FREEZING POINT: Not applicable for product
VISCOSITY: Not applicable for product
VOC CONTENT: 0-30% by weight

Section 10: Stability and Reactivity

STABILITY:
Stable under normal conditions.

CONDITIONS TO AVOID:
Avoid contamination with acidic materials, heat, direct sunlight, ultraviolet radiation, strong oxidizing conditions and freezing conditions. Unstable at elevated temperatures and pressures, or may react with water or acids with some release of energy, but not violently.

INCOMPATIBILITY (MATERIALS TO AVOID):
Acidic materials, anhydrides, strong oxidizers.

HAZARDOUS DECOMPOSITION PRODUCTS:
Carbon monoxide and carbon dioxide.

HAZARDOUS POLYMERIZATION:
May occur if mixed with acidic materials.

Section 11: Toxicological Information

There is no toxicological information available for the product mixture.

<table>
<thead>
<tr>
<th>GHS Required Criteria</th>
<th>Toxicity Criteria</th>
<th>Toxicity Information</th>
<th>Comments</th>
<th>Chemical Constituent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acute Toxicity</td>
<td>LD50 Dermal Rabbit</td>
<td>9510 mg/kg</td>
<td></td>
<td>P series glycol ethers</td>
</tr>
<tr>
<td></td>
<td>LC50 Inhalation Rat</td>
<td>352 ppm</td>
<td></td>
<td>P series glycol ethers</td>
</tr>
<tr>
<td></td>
<td>LD50 Dermal Rabbit</td>
<td>500-5000 mg/kg</td>
<td>Polyfunctional Aziridine</td>
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</tr>
<tr>
<td>Skin Corrosion/Irritation</td>
<td></td>
<td>No information is available.</td>
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<td></td>
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<tr>
<td>Serious Eye Damage / Eye Irritation</td>
<td></td>
<td>Eye corrosive based on animal studies.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Respiratory or Skin Sensitization</td>
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<td>Known skin sensitizer based on animal studies. Known respiratory sensitizer.</td>
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<tr>
<td>Germ Cell Mutagenicity</td>
<td></td>
<td>No information is available.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Carcinogenicity</td>
<td></td>
<td>Not listed NTP</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Not listed IARC</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Not listed OSHA</td>
<td></td>
<td></td>
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<tr>
<td>Reproductive Toxicity</td>
<td></td>
<td>No information is available.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>STOST – Single Exposure</td>
<td>Inhalation:</td>
<td>May cause respiratory irritation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>STOST – Repeated Exposure</td>
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<td>No information is available.</td>
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<tr>
<td>Aspiration Hazard</td>
<td></td>
<td>No information is available.</td>
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<tr>
<td>Ames test</td>
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</tr>
</tbody>
</table>

STOST = Specific Target Organ Systemic Toxicity

OTHER INFORMATION:
Only selected Registry of Toxic Effects of Chemical Substances (RTECS) data is presented here. See actual entry in RTECS for complete information.

Section 12: Ecological Information

| BIOACCUMULATION:         | Low potential for bioaccumulation (log Pow < 3) | Polyfunctional Aziridine |
| ECO TOXICITY:            | LC50 / 96 HOURS Pimephales promelas (fathead minnow) 10,000 mg/l | P series glycol ethers |
|                         | LC50 / 48 HOURS Daphnia magna. 1,919 mg/l (nominal) | P series glycol ethers |
**Section 13: Disposal Considerations**

**WASTE FROM RESIDUES / UNUSED PRODUCTS:**
Follow the waste disposal requirements of your country, state, or local authorities.

**CONTAMINATED PACKAGING:**
Recommend contaminated packaging material should be disposed of as stated above for residues and unused product.

**RINSATE:** Do not dispose of rinse water containing product in a sanitary sewer system or storm water drainage system.

**Section 14: Transport Information**

**ROAD TRANSPORT:**

<table>
<thead>
<tr>
<th>ADR = International Carriage of Dangerous Goods by Road</th>
<th>DOT PROPER SHIPPING NAME</th>
<th>DOT / ADR HAZARD CLASS</th>
<th>DOT / ADR LABELS</th>
<th>PLACARD</th>
<th>DOT / ADR PACKAGING GROUP</th>
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</thead>
<tbody>
<tr>
<td>UN NUMBER: UN 3082</td>
<td>Environmentally hazardous substance, liquid, N.O.S. (Polyfunctional Aziridine)</td>
<td>Miscellaneous</td>
<td>Class 9</td>
<td>Class 9</td>
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</table>

**SEA TRANSPORT:**

<table>
<thead>
<tr>
<th>IMDG</th>
<th>PROPER SHIPPING NAME</th>
<th>UN NUMBER SEA</th>
<th>CLASS</th>
<th>PACKING GROUP</th>
<th>EmS No.:</th>
<th>MARINE POLLUTANT</th>
<th>SEA TRANSPORT NOTES</th>
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<tbody>
<tr>
<td>UN 3082</td>
<td>Environmentally hazardous substance, liquid, N.O.S. (Polyfunctional Aziridine)</td>
<td>9</td>
<td>I</td>
<td>F-A, S-F</td>
<td>No</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**AIR TRANSPORT:**

| IATA/ICAO | UN NUMBER | PROPER SHIPPING NAME | HAZARD CLASS | PACKAGING GROUP |
|-----------|-----------|----------------------|--------------|----------------|-----------------|
| UN 3082 | Environmentally hazardous substance, liquid, N.O.S. (Polyfunctional Aziridine) | 9 | I |

**Section 15: Regulatory Information**

**Directive 1999/45/EC**

**LABEL FOR SUPPLY:**

<table>
<thead>
<tr>
<th>RISK PHRASES</th>
<th>R-Phrase</th>
<th>S-Phrase</th>
<th>T-Phrase</th>
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<tbody>
<tr>
<td>R36</td>
<td>Irritating to Eyes</td>
<td>S24</td>
<td>Avoid contact with Skin</td>
</tr>
<tr>
<td>R38</td>
<td>Irritating to Skin</td>
<td>S25</td>
<td>Avoid contact with Eyes</td>
</tr>
</tbody>
</table>

**TOXIC SUBSTANCES CONTROL ACT (TSCA) STATUS:**

This product is in compliance with rules, regulations, and orders of TSCA. All components are listed on the TSCA Inventory.
TOXIC SUBSTANCES CONTROL ACT (TSCA) STATUS:
This product is in compliance with rules, regulations, and orders of TSCA. All components are listed on the TSCA Inventory.

SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT OF 1986 (SARA) TITLE III SECTION 313 SUPPLIER NOTIFICATION:
This regulation requires submission of annual reports of toxic chemical(s) that appear in section 313 of the Emergency Planning and Community Right To Know Act of 1986 and 40 CFR 372. This information must be included in all MSDS’s that are copied and distributed for the material.
The Section 313 toxic chemicals contained in this product are: None

CALIFORNIA PROPOSITION 65:
This regulation requires a warning for California Proposition 65 chemical(s) under the statute.
The California proposition 65 chemical(s) contained in this product are: None

STATE RIGHT-TO-KNOW TOXIC SUBSTANCE OR HAZARDOUS SUBSTANCE LIST:
Florida Toxic Substance(s): Not listed
Massachusetts’s hazardous substance(s): Not listed
Pennsylvania hazardous substance code(s): Not listed
New Jersey: Not listed
Illinois: Not listed
Michigan: Not listed

CANADA:
This MSDS/SDS will be non-compliant 3 years after the issue date. This MSDS contains all of the information required by the Controlled Products Regulations (CPR).

WHMIS-INFORMATION:
This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR), SOR/88-66, Current to February 20, 2012. The classes of controlled products listed in the CPR, Section 32, Part IV, have been reviewed and based on Professional Judgment this product has been determined to not be WHMIS controlled.

EUROPEAN UNION:
This product has been reviewed for compliance with the following European Community Directives: REACH 1907/2006; Directive 1999/45/EC, Regulation (EC) No 1272/2008 on classification, labeling and packaging (CLP) of substances and mixtures.
WGK: 0 (German Federal Water Management Act) (Water Hazard Class)

Section 16: Other Information
European Community Hazards Identification:
R: None
S: None
Danger Symbol(s): None

Revision Comments: Initial version April 18, 2014
Revision Number: 0
Information Sources: RTECS, REACH, OSHA 29CFR 1910.1200

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