**MATERIAL SAFETY DATA SHEET**


Section 1. Identification of Chemical Substance and Company

1.1. **PRODUCTS IDENTIFICATION:** zbond™90

1.2. **USE OF SUBSTANCE:** Infiltrant

1.3. **COMPANY:**

   Z Corporation
   32 Second Ave.
   Burlington, MA 01803
   Contact Person: Manager of Technical Services
   Telephone Number: 781-852-5050
   **Foreign Contact:** +(45) 48 14 11 22
   Svanevang 2, 3450 Allerød, Denmark
   **Date of Preparation:** 6/08

1.4. **EMERGENCY TELEPHONE:**

   For Hazardous Materials Emergency Spill, Leak, Fire, Exposure or Accident
   Call CHEMTREC – Day or Night
   800-424-9300
   INTERNATIONAL, 703-527-3887
   (collect calls accepted)

Section 2. Composition/Information of Ingredients

Substance is a mixture with following general composition:

<table>
<thead>
<tr>
<th>Ingredients</th>
<th>Approximate % by weight</th>
<th>C.A.S. No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cyanoacrylate</td>
<td>90-100%</td>
<td>Trade Secret</td>
</tr>
</tbody>
</table>

Section 3. Hazard Identification

**Potential Human Health Effects:**

Bonds skin rapidly and strongly. Skin, eye and mucous membrane irritant. Prolonged and repeated overexposure to vapors may produce allergic reactions with asthma-like symptoms in sensitive individuals.

**Target Organs or Systems:**

Skin, eyes, and mucous membranes.

**Route of Exposure:**

- **Skin Contact:** Can bond skin rapidly and strongly. Skin contact may cause burns and/or irritation.
- **Eye Contact:** Can cause irritation.
- **Inhalation:** May cause irritation.
- **Ingestion:** May be harmful if swallowed.
Signs and Symptoms of Exposure:

Acute:
- **Skin Contact**: Bonds skin rapidly and strongly. May cause burns and/or irritation.
- **Eye Contact**: May cause irritation.
- **Inhalation**: Vapors may cause mucous membrane irritation.
- **Ingestion**: May be harmful if swallowed.

Chronic:
- **Inhalation**: Prolonged or repeated overexposure may produce allergic reactions with asthma-like symptoms in sensitive individuals.
- **Skin Contact**: Bonds skin rapidly and strongly. May cause burns and/or irritation.
- **Eye Contact**: May cause irritation.
- **Ingestion**: May be harmful if swallowed.

Carcinogens:
None of the components are listed as cancer agents based on current information.

Potential Environmental Effects:
Not readily biodegradable.

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**Section 4. Emergency First Aid**

**Inhalation**: Remove from area to fresh air. Seek medical attention if symptoms persist.

**Eye Contact**: Immediately flush with plenty of water for at least 15 minutes. Get medical attention. If eyelids are stuck together or bonded to the eyeball, wash thoroughly with warm water and apply a gauze patch. Cyanoacrylate introduced into the eyes will attach itself to the eye protein and will cause lachrymatory effect which will help to debond the adhesive. Keep eye covered until debonding is complete, usually within 1-4 days. DO NOT try to open eyes by manipulation. Medical attention should be sought in case solid particles of polymerized cyanoacrylate trapped behind the eyelid caused abrasive damage.

**Skin Contact**: Do not pull bonded skin apart. Soak in warm soapy water. Gently peel apart using a blunt instrument. If skin is burned due to the rapid generation of heat by a large drop, seek medical attention. If lips are bonded, apply warm water to the lips and encourage wetting and pressure from saliva in mouth. Peel or roll lips apart. DO NOT pull lips apart with direct opposing force. Saliva will lift the adhesive in ½ - 2 days.

**Ingestion**: Ensure breathing passages are not obstructed. The product will polymerize rapidly and bond to the mouth making it almost impossible to swallow. Saliva will separate any solidified product in several hours. Prevent the patient from swallowing any separated mass.

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**Section 5. Fire and Explosion Hazard**

- **Flash point (Method Used)**: Not Established
- **Autoignition Temperature**: 485°C or 905°F
- **Extinguishing Media**: Use dry chemical, carbon dioxide or foam.
- **Special Fire Fighting Procedures**: As with all fires, fire fighters should wear full protective gear including supplied air respirators.
- **Unusual Fire & Explosion**: Emits irritating vapors.
- **Exposure Hazard(s)**: Material: Irritant
Section 6. Accidental Release Measures

Procedures of Personal Precautions:
Wear respirator, chemical safety goggles, and chemical gloves.

Environmental Precautions:
No significant environmental hazards identified. Contain spill to prevent spread into drains, sewers, water supplies, or soil.

Methods of Cleaning Up:
Do not use cloths for mopping up. Flood area with water to polymerize (cure). Soak up with an inert absorbent.

Waste Disposal Method:
Polymerize as above. Dispose of in accordance with all applicable federal, state and local environmental regulations. National or regional provisions may also be in force.

Section 7. Storage and Handling

Handling Precautions:
User Exposure: Avoid contact with skin and eyes. Avoid breathing vapors.

Storage Precautions:
Suitable: Store out of direct sunlight at or below 72°F to preserve shelf life. For best results and maximum shelf life, store unopened containers refrigerated (4°C, 39°F) and use within one month after opening.

Special Requirements: Good standards of industrial and personal hygiene should be followed.

Section 8. Exposure Controls & Personal Protection

Exposure Limit Values:
The European Member States have different standards for the components in this preparation.

<table>
<thead>
<tr>
<th>Component</th>
<th>IOELVs (UK)</th>
<th>ACGIH TLV</th>
<th>OSHA PEL</th>
<th>Manufacturer Exposure Limit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cyanoacrylate</td>
<td>None</td>
<td>None</td>
<td>None</td>
<td>0.2 ppm</td>
</tr>
</tbody>
</table>

Notations:
IOELVs = Indicative Occupational Exposure Limit Values  TWA = time weighted average
TLV = Threshold Limit Value  PEL = Permissible Exposure Limit
STEL = Short Term Exposure Limit

Exposure Controls:
Ventilation Controls:
Use mechanical ventilation to maintain airborne levels below exposure limits.

Respiratory Protection:
Respirators are generally not needed under normal conditions of use. An air-purifying respirator equipped with organic vapor cartridges with an particulate prefilter may be necessary for spray applications or other situations such as high temperature use which may produce inhalation exposures.

Protective Gloves:
Avoid skin contact by use of chemical resistant gloves such as polyethylene or nitrile.

Eye Protection:
When directly handling liquid product, chemical safety goggles should be worn.
Skin Protection:
Avoid all skin contact. Depending on the conditions of use, cover as much of the 
exposed skin area as possible by wearing gloves, aprons, long pants, and long sleeved 
shirts.

Other Controls:
Safety shower and eyewash. Always use good personal hygiene and housekeeping 
practices. Wash thoroughly after handling.

Environmental Exposure Controls:
This product is not known to contain chemical components requiring specific 
environmental exposure controls.

Section 9. Physical & Chemical Properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appearance</td>
<td>Liquid</td>
</tr>
<tr>
<td>Color</td>
<td>Colorless</td>
</tr>
<tr>
<td>Odor</td>
<td>Slight</td>
</tr>
<tr>
<td>Solubility in Water</td>
<td>Polymerized by water</td>
</tr>
<tr>
<td>VOC coefficient</td>
<td>&lt;3%</td>
</tr>
<tr>
<td>Boiling Point (°C)</td>
<td>&gt;210°F</td>
</tr>
<tr>
<td>Specific Gravity</td>
<td>1.1</td>
</tr>
<tr>
<td>Vapor Pressure (MM Hg)</td>
<td>&gt;0.5mmHg</td>
</tr>
<tr>
<td>Vapor Density</td>
<td>&gt;1</td>
</tr>
</tbody>
</table>

Section 10. Stability and Reactivity

Stability: Stable

Conditions to Avoid: Not available

Materials to Avoid: Incompatible: Polymerized by contact with water, alcohols, amines, 
alkalines

Hazardous Decomposition Products: None

Section 11. Toxicological Information

Acute oral LD50 >5000 mg/kg (rat) (estimated)
Acute dermal LD50 >2000 mg/kg (rabbit) (estimated)

Section 12. Ecological Information

No data available.

Section 13. Disposal Considerations
Polymerize with water. Incinerate or solid adhesive can be land filled in accordance with all 
applicable federal, state, and local environmental regulations.

Section 14. Transportation Information

U.S. Department of Transportation Ground (49 CFR):
Proper shipping name: Combustible liquids, n.o.s. (Cyanoacrylate ester)
Hazard class or division: Combustible liquid
Identification number: NA1993
Packing group: None
Exceptions: (Not more than 450 liters) Unrestricted
Marine pollutant: None

International Air Transportation (ICAO/IATA):
Proper shipping name: Aviation regulated liquids, n.o.s. (Cyanoacrylate ester)
Hazard class division: 9
Identification number: UN 3334
Packing group: None
Exceptions: (Not more than 500 ml) Unrestricted
**Water Transportation (IMO/IMDG):**
- **Proper shipping name:** Unrestricted
- **Hazard class or division:** None
- **Identification number:** None
- **Packing group:** None
- **Marine pollutant:** None

### Section 15. Regulatory Information

The following provides a summary of the legal requirements.

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>EPA TSCA</th>
<th>CA Prop 65</th>
<th>European Economic Community (EEC)</th>
<th>Canada Regs</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>EINECS</td>
<td></td>
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<td></td>
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<td></td>
<td>European Community Standards</td>
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<td></td>
<td></td>
<td></td>
<td>Listed as dangerous chemicals</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>EEC Symbol</td>
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<td></td>
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<td></td>
<td>DSL</td>
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</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>NPRI</td>
<td></td>
</tr>
<tr>
<td>1.Cyanoacrylate</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
<td>Xi</td>
</tr>
</tbody>
</table>

DSL = Canadian Domestic Substance List  
NPRI = National Pollutant Release Inventory

**Relevant Risk and Safety Phrases for the Mixture:**

**Xi - Risk Phrases:**
- R36/37/38 – Irritating to eyes, respiratory system and skin

**Safety Phrases:**
- S23: Do not breathe vapor
- S24/25 Avoid contact with skin and eyes
- S26: In case of contact with eyes, rinse immediately with plenty of water and seek medical services

Pursuant to Title III of the Superfund Amendments and Reauthorization Act of 1986, (SARA) and 40 CFR 372 Part 372, this product does not contain chemicals subject to the reporting requirements under Section 313.

All ingredients of this product are included in the U.S. Environmental Protection Agency’s Toxic Substances Control Act Chemical Substance Inventory (TSCA).

This product contains hydroquinone which is subject to the reporting requirements under the Canadian National Pollutant Release Inventory (NPRI).

California Proposition 65: This product does not contain chemicals which are known to the state of California to cause cancer.

### Section 16. Other Information

**HMIS (Hazardous Materials Information System) for secondary labeling:**
- **Health 2**
- **Fire Hazard 2**
- **Physical Hazard 2**
- **Personal Protective Equipment B**


References

1) 2008 Threshold Limit Values and Biological Exposure Indices. American Conference of Governmental Industrial Hygienists.
2) MSDS + Cheminfo, Canadian Centre for Occupational Health and Safety
3) SAX’S Dangerous Properties of Industrial Materials, Tenth Edition
4) TSCA & SARA Title III by the U.S. Environmental Protection Agency and the National Technical Information Services
5) Raw Material Manufacturers Material Safety Data Sheets
6) US National Institute of Medicines Toxnet current 2008

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