# 1. PRODUCT AND COMPANY IDENTIFICATION

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1.1. Manufacturer</td>
<td>INNOX Corporation</td>
</tr>
<tr>
<td>1.2. Address</td>
<td>820-6, Donghang-Ri, Yangsung-Myun, Ahnsung-City, Gyunggi-Do, KOREA.</td>
</tr>
<tr>
<td>1.3. Phone Number</td>
<td>82-31-671-0290 (Information)</td>
</tr>
<tr>
<td>1.4. Emergency Telephone</td>
<td>82-31-671-0290</td>
</tr>
<tr>
<td>1.5. Product Name</td>
<td>WL Series</td>
</tr>
<tr>
<td>1.6. Product Description</td>
<td>WL Series is a composite of Dicing film and modified B-Stage epoxy adhesive.</td>
</tr>
</tbody>
</table>

※ INNOSEM® is a registered trademark of INNOX Corporation
## 2. COMPOSITION / INFORMATION ON INGREDIENTS

### 2.1 Composition.

<table>
<thead>
<tr>
<th>Chemical substance</th>
<th>Ingredient</th>
<th>CAS No.</th>
<th>Percent(wt%) of component</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dicing Film</td>
<td>Polyolefin Film</td>
<td>Trade Secret</td>
<td>-</td>
</tr>
<tr>
<td>Adhesive Resin</td>
<td>Rubber</td>
<td>Trade Secret</td>
<td>20-70</td>
</tr>
<tr>
<td></td>
<td>Epoxy 1</td>
<td>Trade Secret</td>
<td>5-20</td>
</tr>
<tr>
<td></td>
<td>Epoxy 2</td>
<td>25068-38-6</td>
<td>5-20</td>
</tr>
<tr>
<td></td>
<td>Hardner</td>
<td>Trade Secret</td>
<td>2-8</td>
</tr>
<tr>
<td></td>
<td>Fused Silica</td>
<td>60676-86-0</td>
<td>5-40</td>
</tr>
</tbody>
</table>

- PO FILM : Trade Secret
- Adhesive Resin : INNOX Corporation
3. HAZARDS IDENTIFICATION

3.1. Classification : N/A

3.2. Acute Effects

   Eye Contact : Vapors from heated material may cause eye irritation (signs/symptoms can include redness, swelling, pain, and tearing.).

   Skin Contact : Skin Burns (from contact with molten material): signs/symptoms may include burning pain, red and swollen skin, and blisters.

   Inhalation : Irritation (upper respiratory): signs/symptoms can include soreness of the nose and throat, coughing and sneezing. Vapors of heated material may cause respiratory system irritation.

   If Swallowed : Ingestion is not a likely route of exposure to this product.

   Irritation of Gastrointestinal Tissues : signs/symptoms can include pain, vomiting, abdominal tenderness, nausea, blood in vomitus, and blood in feces.

※Note : Product under normal conditions does not represent an inhalation, ingestion or contact health hazard. However, overheating may release fumes and/or vapor which present health hazards if TLV is exceeded.

4. FIRST AID MEASURES

4.1. Eye Contact :

   Not a probable route of exposure. Consult physician in case of contact.

4.2. Skin Contact :

   Wash with soap and water in case of prolonged contact.

   Consult physician if skin irritation exists.

4.3. Inhalation :

   Not a probable route of exposure. However, If signs/symptoms continue, consult physician in case of inhalation.

4.4. Ingestion :

   Not a probable route of exposure. However, if swallowed and symptoms develop, seek medical attention.
5. FIRE FIGHTING MEASURES

5.1. Flash Point (T.O.C) : N/A
5.2. Flammable Limits (in air) : N/A
5.3. Extinguishing Media : Water spray, CO₂, Dry Chemical, Foam
5.4. Fire Fighting Procedures : Toxic fumes may be evolved in a fire. Wear full protective clothing, including helmet, self-contained, positive pressure or pressure demand breathing apparatus, bunker coat and pants, and protective covering for exposed areas of the head.
5.5. Unusual Fire and Explosion Hazards : Not a fire or explosion hazards are anticipated.

6. ACCIDENTAL RELEASE MEASURES

Not Possibility of leaking.

7. HANDLING AND STORAGE

7.1. Handling Precautions : Avoid skin and eye contact. Do not lick or put into mouth Spacer related products. Avoid breathing mist. Wash after handling, especially before eating, drinking or smoking. Protective wear(gloves, sleeved, clothing) must be used during handling instead of bare hands, especially Spacer series.


7.3. Storage Precautions : From the production date Temperature 25±5°C, Humidity 60% ↓, Storage for 1 month, Others keep in cold storage. (below 5°C in the dark / 12 months)
8. EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1. Engineering Controls
   Local Ventilation: Safe handling of DAF related products at high temperatures (above 100°C) requires appropriate local exhaust and adequate ventilation.
   General Ventilation: recommended.

8.2. Eye Protection:
   Avoid eye contact. Wear safety glasses with side shields.

8.3. Skin Protection:
   Avoid skin contact with bare hands. Wear appropriate protective gloves, such as Nomex, when handling this material to prevent thermal burns.

8.4. Respiratory Protection:
   Avoid prolonged breathing of vapors during hot pressing.

9. PHYSICAL AND CHEMICAL PROPERTIES

<table>
<thead>
<tr>
<th>Property</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical Form</td>
<td>refer to Description of Products</td>
</tr>
<tr>
<td>Odor</td>
<td>odorless (heating state → resinous odor)</td>
</tr>
<tr>
<td>Solubility (in water)</td>
<td>Insoluble</td>
</tr>
<tr>
<td>pH Value</td>
<td>N/A</td>
</tr>
<tr>
<td>Boiling Range</td>
<td>N/A</td>
</tr>
<tr>
<td>Vapor Pressure(mmHg)</td>
<td>N/A</td>
</tr>
<tr>
<td>Melting Point</td>
<td>N/A</td>
</tr>
<tr>
<td>Evaporation Rate</td>
<td>N/A</td>
</tr>
<tr>
<td>Partition Coefficient</td>
<td>N/A</td>
</tr>
<tr>
<td>% Volatile weight</td>
<td>ca. &lt; 1% by wt.</td>
</tr>
<tr>
<td>Specific Gravity</td>
<td>0.95 @25(PO film) / 1.10 @25(Adhesive)</td>
</tr>
<tr>
<td>* ca.</td>
<td>Approximately</td>
</tr>
</tbody>
</table>

10. STABILITY AND REACTIVITY

10.1. Stability/Reactivity: Stable
10.2. Combustibility: Self-Extinguishing
10.3. Ignitability: None
INNOX Corporation
Material Safety Data Sheet

INNOOSEM® Die Attach Film : WL Series.

(spontaneous ignition and/or reaction with water)

10.4. Oxidation : None
10.5. Self-reactivity / Explosiveness : None
10.6. Dust(Powder) Explosiveness : No data Available
10.7. Hazardous Decomposition Products: Carbon Monoxide and Carbon Dioxide, Toxic Vapors, Gases or Particulates.

11. TOXICOLOGICAL INFORMATION

11.1. Skin Erosion : No data available
11.2. Irritation(Skin and Eye) : No data available
11.3. Acute Toxicity : No data available
11.4. Chronic Toxicity : No data available
11.5. Carcinogenesis : No data available
11.6. Mutation : No data available
11.7. Effects on the Reproductive Systems : No data available
11.8. Teratogenesis : No data available
11.9. Others(inclusive of the case where toxicity generated reacting with water) :
   No data available

12. ECOLOGICAL INFORMATION

12.1. Biodegradability : No data available
12.2. Bioaccumulation : No data available
12.3. Fish Toxicity : No data available

13. DISPOSAL CONSIDERATIONS

Handling and storage considerations described in section 5, 6, 7 and 8.
13.1. Disposal Treatment : This product should be treated based on Local Waste Disposal Regulation.
   Incineration is recommended.
### 14. TRANSPORTATION INFORMATION

14.1. Regulations related to The Ships Safety Act : Not assessed
14.2. Regulations related to Aviation Law
   Refer to above information for Regulations related to the Ships Safety Act

### 15. REGULATORY INFORMATION

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
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</thead>
<tbody>
<tr>
<td>15.1. Law Concerning Examination and Regulation of Manufacture.</td>
<td>: N/A</td>
</tr>
<tr>
<td>15.2. Industrial Safety and Health Law</td>
<td>: N/A</td>
</tr>
<tr>
<td>15.3. High Pressure Gases Control Law</td>
<td>: N/A</td>
</tr>
<tr>
<td>15.4. Pollutant Release and Transfer Register</td>
<td>: Not assessed</td>
</tr>
</tbody>
</table>

### 16. OTHER INFORMATION

These data are offered in good faith as typical values and not as product specification. No warranty, either expressed or implied, is hereby made. The recommended industrial hygiene and safe handling procedures are believed to be generally applicable. However, each user should review these recommendations in the specific context of the intended use and determine whether they are appropriated.

< Legend >

- **CAS No**: Chemical Abstract Service Registry Number
- **N/A**: Not Applicable
- **N/E**: None Established
- **TLV**: Threshold Limit Value