# 1. PRODUCT IDENTIFICATION

1.1 Product Name: System Six ™ A component

1.2 Chemical Name: See ingredients listed in section 2

1.3 Synonyms: None reported by the manufacturer

1.4 Trade Names: System Six R, S, FF

1.5 Product Use:

1.6 Manufacturer's Name: Sakura Enterprises, Inc. dba Inflatable Technologies

1.7 Manufacturer's Address: 2290 S. Lipans St. Denver, CO 80223

1.8 Business Phone: 303-922-3111

1.9 Emergency Phone: 303-922-3111

---

# 2. COMPOSITION & INGREDIENTS

<table>
<thead>
<tr>
<th>COMPOSITION</th>
<th>CAS No./RTECS No.</th>
<th>%</th>
<th>TWA</th>
<th>STEL</th>
<th>CEILING</th>
<th>IDLH</th>
<th>UNITS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Proprietary Polymer</td>
<td>Proprietary</td>
<td>80-90</td>
<td>NA</td>
<td>NA</td>
<td>N A</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td>Methylene bis(4-cyclohexylisocyanate)</td>
<td>5124-30-1</td>
<td>2-5</td>
<td>0.005</td>
<td>NA</td>
<td>0.01</td>
<td>NA</td>
<td>ppm</td>
</tr>
<tr>
<td>Butyl Ethanoate</td>
<td>123-86-4</td>
<td>10-20</td>
<td>150</td>
<td>200</td>
<td>NA</td>
<td>NA</td>
<td>ppm</td>
</tr>
</tbody>
</table>

# 3. IDENTIFICATION OF RISKS

3.1 Hazard Identification:

<table>
<thead>
<tr>
<th>HEALTH</th>
<th>FLAMMABILITY</th>
<th>REACTIVITY</th>
<th>PERSONAL PROTECTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>3</td>
<td>1</td>
<td></td>
</tr>
</tbody>
</table>

3.2 Routes of Entry:

| INHALATION: YES | SKIN & EYES: YES | INGESTION: YES |

3.3 Effects of Exposure:

- **EYES**: Possible irritation and burning sensation.
- **SKIN**: Possible irritation and dermatitis.
- **INGESTION**: Possible gastrointestinal irritation, nausea, vomiting or diarrhea.
- **INHALATION**: Mucous membrane irritation

3.4 Symptoms of Exposure:

- **EYES**: Irritation and burning sensation. Temporary corneal damage may occur. (Usually reversible)
- **SKIN**: Possible irritation and dermatitis (rash), characterized by red, dry, itching skin.
- **INGESTION**: Gastrointestinal irritation, nausea, vomiting, and headache.
- **INHALATION**: Bronchitis, bronchial spasms, and pulmonary edema have been reported

3.5 Acute Health Effects:

- **EYES**: Irritation.
- **SKIN**: Possible irritation and dermatitis (rash). Isocyanate sensitivity
- **INGESTION**: Possible gastrointestinal irritation, nausea, vomiting or diarrhea.
- **INHALATION**: Lung damage, liver abnormalities, kidney, and or spleen damage.

3.6 Chronic Health Effects:

Possible lung, kidney, liver and spleen damage.

3.7 Target Organ:

Skin, eyes, lungs, kidney, liver and spleen

3.8 Toxicological Properties:

See section 11.

---

# 4. FIRST AID

4.1 First Aid:

- **EYES**: Flush eyes thoroughly with copious amounts of water for at least 20 minutes, holding eyelids open to ensure complete flushing. If irritation persists, contact a physician.
- **SKIN**: Wash affected areas with soap and water. If irritation persists, contact a physician. Launder clothing before reuse.
- **INGESTION**: Do not induce vomiting. If vomiting occurs spontaneously, keep victim's head lowered (forward) to reduce the risk of aspiration. Get medical attention immediately.
- **INHALATION**: Remove victim to fresh air at once.

4.2 Medical Conditions Aggravated by Exposure:

None known.
5. FIRE & EXPLOSION HAZARDS

5.1 Flashpoint & Method: 24°C T.C.C.

5.2 Autignition Temperature: 425°C

5.3 Flammability Limits: Lower Explosive Limit (LEL): 1.70%  

5.4 Fire & Explosion Hazard: Flammable Liquid. Vapors are heavier than air.

5.5 Extinguishing Methods: CO₂, Alcohol Foam, Dry Chemical, or Water Spray

5.6 Firefighting Procedures: Firefighters should wear full-face, self-contained breathing apparatus (MSHA/NIOSH approved or the equivalent) and impervious clothing.

6. SPILLS & LEAKS

6.1 Spills: Secure spill area and maximize ventilation. Deny entry to all unprotected individuals. Individuals involved in the cleanup must wear appropriate personal protective equipment. Recover free liquid or cover with inert absorbent material and place into appropriate container(s) for disposal. If necessary, dike well ahead of the spill to prevent runoff into drains, sewers or any natural waterway or drinking supply. Neutralize with a mixture of ammonia, detergent, and water.

7. STORAGE & HANDLING

7.1 Work & Hygiene Practices: Use normal hygiene practices. Avoid breathing vapors. Avoid direct skin contact. Wash hands thoroughly after using this product and before eating, drinking, or smoking.

7.2 Storage & Handling: Use and store in a cool, dry, well-ventilated area. Keep away from excessive heat, open flames, sparks, and other possible sources of ignition. Do not store in unmarked containers or storage devices.

7.3 Special Precautions: Readily available emergency fire, first aid, and spill response equipment and/or measures are highly recommended.

8. EXPOSURE CONTROL & PERSONAL PROTECTION

8.1 Ventilation & Engineering Controls: Explosion-proof ventilation equipment is sufficient for use with this product. Local exhaust is recommended in enclosed or confined spaces.

8.2 Respiratory Protection: A respiratory protection program that meets ANSI Z88.2 requirements must be followed whenever workplace conditions warrant a respirator's use.

8.3 Eye Protection: Safety glasses with side shields should be used with this product. If splashing is anticipated, splash goggles and a face shield are recommended.

8.4 Hand Protection: Where contact is likely, impervious gloves are recommended. Do not wear rings, watches, or jewelry that could entrap the material against the skin.

8.5 Body Protection: None required under normal conditions.

9. PHYSICAL & CHEMICAL PROPERTIES

9.1 Density: 8.5 lb/gal

9.2 Boiling Point: > 111°C

9.3 Vap: Itty: 10-20 %

9.4 Evaporation Rate: 1.0 (water = 1)

9.5 Vapor Pressure @ 18°C: 20mm Hg

9.6 Molecular Weight: NA

9.7 Appearance & Colour: Viscous, clear liquid

9.8 Odor & Threshold ppm: NA

9.9 Solubility: Reacts in water

9.10 pH: NA

9.11 Viscosity: NA

9.12 Coefficient Oil/Water Distribution: NA

9.13 Additional Information: Vapor density 3.72 (Air =1.0)
### 10. STABILITY & REACTIVITY

10.1 **Stability:**
Stable under normal conditions.

10.2 **Decomposition Products:**
Heat and CO, CO₂, N Oxides, HCN, TDI, solvents. Reacts with H₂O to form heat, CO₂ and ureas.

10.3 **Polymerization:**
Contact with isocyanate substances or moisture. May occur at extreme temperatures.

10.4 **Conditions to Avoid:**
Close proximity to incompatible substances. High temperatures and sources of ignition.

10.5 **Incompatible Substances:**
Strong acids, strong bases, alcohols, water and amines. Some copper alloys.

### 11. TOXICOLOGICAL INFORMATION

11.1 **Toxicity Data:**
Methylene bis[4-cyclohexylisocyanate]

11.2 **Acute Toxicity (H&J scale):**
LD₅₀ = 4, Dermal LD₅₀ = 5, Inhalation LC₅₀ = 3

11.3 **Chronic Toxicity:**
NA

11.4 **Suspected Carcinogen:**
NO

11.5 **Reproductive Toxicity:**
- Mutagenicity: Negative Ames Test.
- Embryotoxicity: None Determined.
- Teratogenicity: None Determined.
- Reproductive Toxicity: None Determined.

11.6 **Irritancy of Product:**
NA

11.7 **Biological Exposure Indices:**
NA

11.8 **Medical Recommendations:**
Treat symptomatically.

### 12. ECOLOGICAL INFORMATION

12.1 **Environmental Stability:**
The manufacturer has not reported detailed studies on the environmental fate of the material. However, prudent practice would dictate the material not be allowed to enter the environment.

12.2 **Effect on Plants & Animals:**
The manufacturer has not reported any plant and animal effects.

12.3 **Effect on Aquatic Life:**
The manufacturer has not reported any aquatic life effects.

### 13. DISPOSAL CONSIDERATIONS

13.1 **Waste Disposal:**
Dispose of in accordance with federal, state & provincial hazardous waste laws.

13.2 **Special Considerations:**
If the material is unsuitable for recycling or reclamation, enclosed-controlled incineration is recommended unless otherwise prohibited by local ordinance.

### 14. TRANSPORTATION INFORMATION

14.1 **DOT CLASS:**
3

14.2 **UN/NA:**
1139

14.3 **ER Guide Number:**
128

14.4 **Packing Group:**
2

**Shipping Name:** Coating Solution

### 15. REGULATORY INFORMATION

15.1 **SARA Reporting Requirements:**
This product does contain substances subject to SARA reporting requirements.
15. REGULATORY INFORMATION

15.2 Canada WHMIS:

<table>
<thead>
<tr>
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<td>5124-30-1</td>
<td>2-5</td>
</tr>
</tbody>
</table>

15.3 SARA 313:
NA

15.4 CA PROP 65:
NA

15.5 OSHA 29 CFR 1910.1200:
Hazardous

15.6 TSCA:
On TSCA inventory.

16. OTHER INFORMATION

16.1 Other Information:
This product has been classified according to the hazard criteria of the U.S. Occupational Safety & Health Administration’s hazard Communication Standards and Health Canada’s Controlled Products Regulations (CPR) and the MSDS contains all of the information required by the CPR. The components of this product are listed on the DSL/NDSL. None of the components of this product are listed on the priorities substances list.

16.2 Terms & Definitions:
Please see page 5 of this Material Safety Data Sheet.

16.3 Disclaimer:
This Material Safety Data Sheet complies with U.S. OSHA’s Hazard Communication Standard, 29 CFR §1910.1200 and Health Canada’s Workplace Hazardous Materials Information System (WHMIS). To the best of Sakura Enterprises Inc.’s knowledge, the information contained herein is reliable and accurate as of this date; however, accuracy, suitability or completeness are not guaranteed and no warranties of any type, either expressed or implied, are provided. The information contained herein relates only to the specific product. Contact the manufacturer for additional information.

16.4 Prepared for:
Inflatable Technologies
2290 S. Lipan St.
Denver, CO 80223
Phone: 303.922.3111

16.5 Prepared by:
Sakura Enterprises, Inc.
2290 S. Lipan St.
Denver, CO 80223
Phone: 303.922.3111
Web: www.raftrepair.com
MATERIAL SAFETY DATA SHEET

Prepared according to the WHMIS, ANSI, ACC & OSHA standards.

Revision 1.0
10/01/2005

DEFINITION OF TERMS

A large number of abbreviations and acronyms appear on a MSDS. Some of these that are commonly used include the following:

GENERAL INFORMATION:

| CAS No. | Chemical Abstract Service Number |

EXPOSURE LIMITS IN AIR:

| ACGIH | American Conference on Governmental Industrial Hygienists |
| TLV | Threshold Limit Value |
| OSHA | U.S. Occupational Safety and Health Administration |
| PEL | Permissible Exposure Limit |
| IDLH | Immediately Dangerous to Life and Health |

FIRST AID MEASURES:

| CPR | Cardiopulmonary resuscitation - method in which a person whose heart has stopped receives manual chest compressions and breathing to circulate blood and provide oxygen to the body. |

HAZARDOUS MATERIALS IDENTIFICATION SYSTEM: HMIS

HEALTH, FLAMMABILITY & REACTIVITY RATINGS:

| 0 | Minimal Hazard |
| 1 | Slight Hazard |
| 2 | Moderate Hazard |
| 3 | Severe Hazard |
| 4 | Extreme Hazard |

PERSONAL PROTECTION RATINGS:

| A | Safety Glasses |
| B | Splash Goggles |
| C | Face Shield & Eye Protection |
| D | Gloves |
| E | Boots |
| F | Synthetic Apron |
| G | Full Suit |
| H | Dust & Vapor Respirator |
| I | Full Face Respirator |
| J | Airline Hood/Mask or SCBA |
| K | Consult your supervisor or S.O.P. for special handling directions. |
| X | | |

Other Standard Abbreviations:

| NA | Not Available |
| NR | No Results |
| NE | Not Established |
| ND | Not Determined |
| ML | Maximum Limit |
| SCBA | Self-Contained Breathing Apparatus |

NATIONAL FIRE PROTECTION ASSOCIATION: NFPA

FLAMMABILITY LIMITS IN AIR:

| Autoignition Temperature | Minimum temperature required to initiate combustion in air with no other source of ignition |
| LEL | Lower Explosive Limit - lowest percent of vapor in air, by volume, that will explode or ignite in the presence of an ignition source |
| UEL | Upper Explosive Limit - highest percent of vapor in air, by volume, that will explode or ignite in the presence of an ignition source |

HAZARD RATINGS:

| 0 | Minimal Hazard |
| 1 | Slight Hazard |
| 2 | Moderate Hazard |
| 3 | Severe Hazard |
| 4 | Extreme Hazard |

ACD | Acidic |
ALK | Alkaline |
COR | Corrosive |
"W" | Use No Water |
OX | Oxidizer |

TOXICOLOGICAL INFORMATION:

LD_{50} | Lethal Dose (solids & liquids) which kills 50% of the exposed animals |
LC_{50} | Lethal concentration (gases) which kills 50% of the exposed animal |
ppm | Concentration expressed in parts of material per million parts |
TD_{50} | Lowest dose to cause a symptom |
TC_{LO} | Lowest concentration to cause a symptom |
TD_{10}, LD_{50}, & LC_{50} | Lowest dose (or concentration) to cause lethal or toxic effects |
IARC | International Agency for Research on Cancer |
NTP | National Toxicology Program |
RTECS | Registry of Toxic Effects of Chemical Substances |
BCF | Bioconcentration Factor |
TLV | Median threshold limit |
log K_{OW} or log K_{OC} | Coefficient of Oil/Water Distribution |

REGULATORY INFORMATION:

WHIMS | Canadian Workplace Hazardous Material Information System |
DOT | U.S. Department of Transportation |
TC | Transport Canada |
EPA | U.S. Environmental Protection Agency |
DSL | Canadian Domestic Substance List |
NDSL | Canadian Non-Domestic Substance List |
TSCA | U.S. Toxic Substance Control Act |