SAFETY DATA SHEET
PRODUCT NAME: "SUMIREX Excel" CRC-8650
MSDS NO.: MSDS-CRC-095
DATE PREPARED: Mar.27,2002 according to 93/112

1. PRODUCT AND COMPANY IDENTIFICATION
PRODUCT NAME: "SUMIREX Excel" CRC-8650
CHEMICAL NATURE: Preparation. Polyamide Resin
MANUFACTURER: SUMITOMO BAKELITE CO., LTD.
Tennosu Parkside Bldg., 5-8, Higashi-Shinagawa 2-chome, Shinagawa-ku,
Tokyo 140-0802, Japan
Phone: 81-3-5462-4037
SUPPLIER: SUMITOMO BAKELITE CO., LTD.
Tennosu Parkside Bldg., 5-8, Higashi-Shinagawa 2-chome, Shinagawa-ku,
Tokyo 140-0802, Japan
Phone: 81-3-5462-4037

EMERGENCY ASSISTANCE: (Please contact any of following sales offices)
NAME & EMERGENCY PHONE NUMBER | ADDRESS
---------------------------------|----------------------------------
Sumitomo Plastics America, Inc. | 900 Lafayette Street, SUITE #310
Phone 408-243-8402 (USA) | Santa Clara, CA 95050

Sumitomo Bakelite Singapore Pte.Ltd. | 1 Senoko South Road,
Phone 65-755-5550 (Singapore) | Singapore 75809

Sumitomo Bakelite Europe B.V. | New Amsterdam Building
Phone 020-691-10-86 (The Netherlands) | Hogeveen 2, 1102 BR Amsterdam

CHEMTREC Phone 800-424-9300 (USA) | 24 hours everyday

2. COMPOSITION / INFORMATION ON INGREDIENTS
COMPONENT | CAS No. | by weight (%)
-----------|--------|----------------
Polyamide Resin | Trade secret | 25–40
γ-Butyrolactone | 96-48-0 | 50–70
Diazonaphthoquinone | Trade secret | 5–10

Labeling according to EC directives:
Hazardous components: none
Hazard symbol: No symbol and risk phrases are required.
Risk phrases: none
Safety phrase: none

3. HAZARDS IDENTIFICATION

*** EMERGENCY OVERVIEW ***
Red Brownish liquid with slightly odor
Repeated contact may cause skin irritation and sensitization.
Can burn in fire but not ordinarily an emergency problem.
Foam, carbon dioxide and dry chemicals can be used on fires.
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<table>
<thead>
<tr>
<th>POTENTIAL HEALTH EFFECTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>EYE : May cause irritating to eyes.</td>
</tr>
<tr>
<td>SKIN : May cause sensitization by skin contact.</td>
</tr>
<tr>
<td>INGESTION : Small amounts (teaspoonful) swallowed during normal handling operations are not likely to cause injury; swallowing amounts are larger than that may cause injury.</td>
</tr>
<tr>
<td>INHALATION : Heated product may produce generate vapors. May be harmful for respiratory tract if inhaled.</td>
</tr>
</tbody>
</table>

4. FIRST-AID MEASURES:

| INHALATION : | Immediately remove the victim from the contamination to fresh air. |
| SKIN CONTACT : | Wash off thoroughly the affected areas under flowing water or shower with soap. If irritation occurs, get medical attention. |
| EYE CONTACT : | Immediately flush eyes with large amounts of water at Gently rinse the minutes. Get medical attention. |
| INGESTION : | Do not induce vomiting. Rinse mouth with plenty water and immediately give the victim milk or water. Get medical attention. |
| NOTE TO PHYSICIANS : | Treat symptomatically. Treatment may vary with condition of victim and specifics of incident. |

5. FIRE-FIGHTING MEASURES

<table>
<thead>
<tr>
<th>EXTINGUISHING MEDIA :</th>
</tr>
</thead>
<tbody>
<tr>
<td>Use foam, carbon dioxide, and dry chemical powder.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>PROTECTION OF FIREFIGHTERS :</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wear full bunker gear inducing positive self-contained breathing apparatus in any closed space.</td>
</tr>
</tbody>
</table>

6. ACCIDENTAL RELEASE MEASURES

<table>
<thead>
<tr>
<th>PERSONAL PRECAUTION :</th>
</tr>
</thead>
<tbody>
<tr>
<td>Use personal protective equipments.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>ENVIRONMENTAL PRECAUTIONS :</th>
</tr>
</thead>
<tbody>
<tr>
<td>Do not flush into surface water or sanitary sewer system.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>METHODS FOR CLEANING UP :</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ventilate spilled area. Remove all sources. Take up with absorbent, inert material (e.g. paper towel, sand) with suitable protective equipment and place in suitable, closed impervious container.</td>
</tr>
</tbody>
</table>

7. HANDLING AND STORAGE

<table>
<thead>
<tr>
<th>HANDLING :</th>
</tr>
</thead>
<tbody>
<tr>
<td>Use with adequate ventilation. Keep away from heat, sparks and open flames. Avoid contact with eyes and skin, and avoid breathing of vapor if generated. Practice good personal hygiene after using this material, especially before eating, drinking smoking or using the toilet.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>STORAGE :</th>
</tr>
</thead>
<tbody>
<tr>
<td>Keep container tightly closed in a below -15 degC, well-ventilated dark place for quality separate from strong oxidents, and protect from direct sunlight.</td>
</tr>
</tbody>
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8.EXPOSURE CONTROLS/PERSONAL PROTECTION

EXPOSURE LIMITS :

<table>
<thead>
<tr>
<th>COMPONENT</th>
<th>ACGIH(TLV-TWA)</th>
<th>OSHA(PEL)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Polyamide Resin</td>
<td>Not listed</td>
<td>Not listed</td>
</tr>
<tr>
<td>γ-Butyrolactone</td>
<td>Not listed</td>
<td>Not listed</td>
</tr>
<tr>
<td>Diazonaphthoquinone</td>
<td>Not listed</td>
<td>Not listed</td>
</tr>
</tbody>
</table>

ENGINEERING MEASURES :
Provide general and/or local exhaust ventilation to control airborne levels below the exposure guidelines. Good general ventilation should be sufficient for most conditions. When processing at elevated temperature, provide local exhaust ventilation.

PERSONAL PROTECTIVE EQUIPMENTS :
Respiratory protection - Wear an approved respirator to protect from vapors or fume.
Hand protection - Chemical-resistant gloves.
Eye protection - Chemical splash goggles or safety glass with side-shields.
Skin & body protection - Clean clothing,long sleeves, apron, full-face cover or legs-covering clothing as appropriate.

9.PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE : Red Brownish liquid
ODOR : Slight odor
BOILING POINT : 203 degC (γ-Butyrolactone)
DECOMPOSITION TEMPERATURE : No information available.
FLASH POINT : 98degC (γ-Butyrolactone) METHOD USED : Opened cup
FLAMMABLE LIMITS : LFL: 3.6 vol%, UFL: 16 vol% (γ-Butyrolactone)
VAPOR PRESSURE : 1.5hPa at 20degC (γ-Butyrolactone)
VAPOR DENSITY : 3.0 (γ-Butyrolactone)
SPECIFIC GRAVITY : 1.1-1.3
SOLUBILITY : γ-Butyrolactone is freely miscible with water.

10.STABILITY AND REACTIVITY

STABILITY : Stable under recommended storage conditions.
CONDITIONS TO AVOID : Keep away from heat,open flame, sparks and sunlight for quality.
MATERIALS TO AVOID : Strong acids, alkali and oxidizing agents.
HAZARDOUS DECOMPOSITION PRODUCTS :
Mainly : Carbon dioxide and oxides of nitrogen.
Slightly : Carbon monoxide, oxide of nitrogen, oxides of sulfur, fluorine compounds and various hydrocarbons.(over 300degC )

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11. TOXICOLICAL INFORMATION
ACUTE TOXICITY:
γ-Butyrolactone
  orl-rat LD50: 1,540mg/kg
  orl-mus LD50: 1,720mg/kg
  lnh-rat LC50: >5100mg/m3/4H

LOCAL EFFECTS: Irritating to eyes and skin.
SENSITIZATION: May cause sensitization by skin contact.

CHRONIC TOXICITY: Potential carcinogen
IARC: γ-Butyrolactone Group3 (not classified as to its carcinogenicity to human)
NTP: Not listed
OSHA: Not regulated

12. ECOLOGICAL INFORMATION
MOBILITY: No data is available on the product itself.
ECOTOXICITY: Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

13. DISPOSAL CONSIDERATION
WASTE FROM RESIDUES: Can burn in a chemical incinerator equipped with an afterburner and scrubber in compliance with government or local disposal regulations, also contaminated packagings do so.

14. TRANSPORT INFORMATION
Not a hazardous material for D.O.T (Department Of Transportation) shipping.
Not dangerous by any mode of international transport.
UN NO: None assigned.

15. REGULATORY INFORMATION
TSCA (TOXIC SUBSTANCES CONTROL LAW):
γ-Butyrolactone is on the 8(b) inventory list.

EINECS (EUROPEAN INVENTORY OF EXISTING COMMERCIAL CHEMICAL SUBSTANCES):
EINECS No: γ-Butyrolactone 202-599-5

ELINCS (European list of Notified Chemical Substances):
Polyamide Resin: Notification No. 98030414
Diazonaphthoquinone: Notification No.98030413

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16. OTHER INFORMATION

DISCLAIMER : The information presented herein was prepared for your reference to be best of our knowledge. It is given in good faith but no warranty expressed on implied is made.

DATA PREPARED BY :

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UTSUNOMIYA PLANT
SUMITOMO BAKELITE CO., LTD.