MATERIAL SAFETY DATA SHEET

Product Name: SaFRon 5371
Product id: 8147
Revision date: 04/06/2009
Supersedes: 27/03/2006

1. Identification of the substance & the company

Trade name: Proprietary FR Blend
Chemical formula: Proprietary formulation
Type of product and use: Flame retardant additive
Supplier: ICL-IP America Inc.
   622 Emerson Road - Suite 500
   St Louis, Missouri 63141, USA
   Tel:(314)983-7884   Fax:(314)983-7607
Emergency Telephone: Chemtrec (800)424-9300

2. Hazards identification

Emergency overview: None under recommended use instructions

3. Composition / information on ingredients

<table>
<thead>
<tr>
<th>Components</th>
<th>CAS No.</th>
<th>Weight %</th>
</tr>
</thead>
<tbody>
<tr>
<td>SaFRon 5371</td>
<td>Confidential</td>
<td>Trade secret</td>
</tr>
</tbody>
</table>

4. First-aid measures

Eye contact: Holding the eyelids apart, flush eyes promptly with copious flowing water for at least 20 minutes. Get medical attention immediately.

Skin contact: Remove contaminated clothing. Wash skin thoroughly with mild soap and plenty of water for at least 15 minutes. Wash clothing before re-use. Get medical attention immediately.
# Material Safety Data Sheet

## SaFRon 5371

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### Inhalation

In case of dust inhalation or breathing fumes released from heated material, remove person to fresh air. Keep him quiet and warm. Apply artificial respiration if necessary and get medical attention immediately.

### Ingestion

If swallowed, wash mouth thoroughly with plenty of water and give water to drink. Get medical attention immediately.

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**NOTE:** Never give an unconscious person anything to drink.

### Notes to the physician

In case of ingestion induce vomiting in alert patient. Treat symptomatically and supportively. No specific antidote.

### 5. Fire-fighting measures

| Suitable extinguishing media | Water spray, carbon dioxide, dry chemical powder, alcohol foam or polymer foam. |
| Fire fighting procedure      | Cool containers with water spray. In closed stores, provide fire-fighters with self-contained breathing apparatus in positive pressure mode |
| Unusual fire and explosion hazards | When heated to decomposition, may release poisonous and corrosive fumes of HBr and oxides of phosphorus. Dust may form a weak explosive mixture with air (class St1) at elevated temperature (>101°C). [Kst = 90 bar.m.s(-1)] |

### 6. Accidental release measures

| Personal precautions | Wear self-contained breathing apparatus, rubber boots and heavy rubber gloves. |
| Methods for cleaning up | Sweep up, place in a bag and hold for waste disposal or possible re-use of material. Avoid raising dust. Ventilate area and wash spill site after material pickup is complete. Avoid access to streams, lakes or ponds. |

### 7. Handling and storage

| Handling | Keep containers tightly closed. Avoid bodily contact. |
| Storage  | Store in a dry, cool, well-ventilated area |
8. Exposure controls / personal protection

Exposure Limits:

<table>
<thead>
<tr>
<th>Components</th>
<th>ACGIH-TLV Data</th>
<th>OSHA (PEL) Data</th>
</tr>
</thead>
<tbody>
<tr>
<td>SaFRon 5371</td>
<td>Not determined</td>
<td>Not determined</td>
</tr>
</tbody>
</table>

Ventilation requirements
Adequate ventilation is recommended to control potential employee exposure.

Personal protective equipment:
- Respiratory protection: Dust respirator
- Hand protection: Protective gloves
- Eye protection: Chemical safety goggles
- Skin and body protection: Body covering clothes and boots

Hygiene measures
Do not eat, smoke or drink where material is handled, processed or stored. Wash hands carefully before eating or smoking.

9. Physical and chemical properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appearance</td>
<td>White powder</td>
</tr>
<tr>
<td>Melting point/range</td>
<td>163.5-168.5°C</td>
</tr>
<tr>
<td>Boiling point/range</td>
<td>Not available</td>
</tr>
<tr>
<td>Flash point</td>
<td>&gt;180°C</td>
</tr>
<tr>
<td>Flammable/Explosion limits</td>
<td>Not flammable</td>
</tr>
<tr>
<td>Auto-ignition temperature</td>
<td>602°C</td>
</tr>
<tr>
<td>Vapour pressure</td>
<td>Not available</td>
</tr>
<tr>
<td>Vapor density</td>
<td>Not available</td>
</tr>
<tr>
<td>Evaporation rate (ether=1)</td>
<td>Not available</td>
</tr>
<tr>
<td>Solubility:</td>
<td></td>
</tr>
<tr>
<td>- Solubility in water</td>
<td>Practically insoluble</td>
</tr>
<tr>
<td>- Solubility in other solvents</td>
<td>Not available</td>
</tr>
<tr>
<td>Specific gravity</td>
<td>2.0</td>
</tr>
<tr>
<td>Decomposition temperature</td>
<td>Not available</td>
</tr>
</tbody>
</table>
MATERIAL SAFETY DATA SHEET

Product Name: SaFRon 5371
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Revision: 4

10. Stability and reactivity

Stability: Stable under normal conditions
Materials to avoid: None known
Conditions to avoid: None known
Hazardous decomposition products: Based on small scale studies, it is unlikely that irritation will occur under normal injection moulding or extrusion processing conditions.

Phosphorus oxides  Hydrogen bromide  The product can form trace amounts of pentaerythrityl tetrabromide during elevated temperature polymer processing activities.

Hazardous polymerization: Not likely to occur

11. Toxicological information

Note: The following data refer to the brominated phosphate ester

Acute toxicity:
- Rat oral LD50: >5000 mg/kg
- Rabbit dermal LD50: >2000 mg/kg
- Rat inhalation LC50: >1.81 mg/l/4 hour
- Eye irritation (rabbit): Minimal irritant
- Dermal irritation (rabbit): Not irritant

Dermal sensitization: Not a sensitizer

Sub-acute toxicity:
- NOEL: 20,000 ppm (4 weeks oral rat)

Sub-chronic toxicity:
- NOEL: 20,000 ppm (13 weeks oral rat)

Chronic toxicity: Not available

Mutagenicity: Not mutagenic by the Ames Test and by mouse lymphoma assay.
Not clastogenic in chromosome aberration test with Chinese hamster cells.

Carcinogenicity: Not classified by IARC
Not included in NTP 11th Report on Carcinogens

Page 4 of 7
12. Ecological information

Note: The toxicological data refer to the main ingredient

Aquatic toxicity:
- 96 Hour-LC50, Fish >100 mg/l (Rainbow Trout)
- 48 Hour-EC50, Daphnia magna >100 mg/l
- 72 Hour-EC50, Freshwater algae >100 mg/l (Selenastrum Capricornutum)

Biodegradation
Not biodegradable
Evidence of inherent biodegradability

13. Disposal considerations

Waste disposal
Solutions greater than 3% by weight have a pH < 2.0, and may be a RCRA hazardous waste upon disposal due to the acidic pH characteristic of the solution. If approved, flush to sewer or waste treatment plant. Large quantities should be neutralized with soda ash. Observe all federal, state and local environmental regulations when disposing of this material.

14. Transportation information

DOT Not regulated
IMO Not regulated
ICAO/IATA Not regulated

15. Regulatory information

USA Reported in the EPA TSCA Inventory
EU Listed
Japan Listed in ENCS
15. Regulatory information

Australia	Listed in AICS
China inventory	Listed
Korea	Listed in ECL

16. Other information

This data sheet contains changes from the previous version in section(s)
1, 4, 5, 13

Health, Safety & Environment Policy
We will strive to ensure that our operations and products meet the needs of the present global community without compromising the ability of future generations to meet their needs.
We accept that the success of our business is dependent on the supply of products and services that will benefit society whilst ensuring human safety and protection of the environment and natural resources.
Within the framework of our commitment to the Responsible Care program, we will provide a healthy and safe work environment for employees and will responsibly manage our products at all stages of their life cycle in order to protect human health and the environment whilst maintaining high production standards of operation.

TO MEET THIS COMMITMENT WE WILL:
Comply with or exceed applicable national and international regulatory requirements and other requirements to which we subscribe.
Communicate openly and actively encourage dialogue with employees, customers and community concerning our products and operations.
Implement documented management systems consistent with and for promotion of the Responsible Care ethics.
Develop and supply products that can be manufactured, transported, used and disposed of safely whilst best meeting the needs of our customers.
Regularly assess, continually improve and responsibly manage health, safety and environmental risks associated with products and processes throughout their life-cycles.
Share knowledge and expertise with others and seek to learn from and incorporate improved practices into our own operations.
Educate and train employees, contractors and customers to improve their HSE performance.
Communicate up-to-date information to enable our workers, customers and other interested parties to handle our products in a safe and environmentally responsible manner.
Endeavor to work with customers, suppliers, distributors and contractors to foster the safe use, transport and disposal of our chemicals.
Support Product Stewardship programs in cooperation with customers, distributors and transporters.
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HSE Division in ISRAEL

End of safety data sheet