1. Identification of the substance & the company

Chemical name: Tetrabromobisphenol A - Tetrabromobisphenol A diglycidyl ether

Chemical formula: (C21H20Br4O4 . C15H12Br4O2) x

Chemical family: Brominated epoxy resin

Molecular weight: 40,000-60,000

Type of product and use: A polymeric flame retardant additive for thermoplastic resin systems.

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: Light straw granules
No adverse health effects in human are known

3. Composition / information on ingredients

<table>
<thead>
<tr>
<th>Components</th>
<th>CAS No.</th>
<th>Weight %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tetrabromobisphenol A-Tetrabromobisphenol A diglycidyl ether</td>
<td>68928-70-1</td>
<td>Not Applicable</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 if irritation occurs.

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. Get medical attention immediately.

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

Notes to the physician Material with low toxicity.
No specific antidote. Treat symptomatically and supportively.

5. Fire - fighting measures

Suitable extinguishing media Carbon dioxide, dry chemicals, foam, water spray (fog).

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 fumes of HBr.

6. Accidental release measures

Personal precautions Wear respirator, chemical safety goggles, rubber gloves and boots.

Methods for cleaning up Avoid raising dust. Ventilate area and wash spill site after material pickup is complete. Sweep up, place in a bag and hold for waste disposal or possible re-use.
7. Handling and storage

Handling
Keep containers tightly closed. Avoid bodily contact.

Storage
Store in a dry, cool, well-ventilated area, away from incompatible materials (see "materials to avoid").

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>Tetrabromobisphenol A-Tetrabromobisphenol A</td>
<td>Not determined</td>
<td>Not determined</td>
</tr>
<tr>
<td>diglycidyl ether 68928-70-1</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Ventilation requirements
Ventilation must be sufficient to maintain TLV-TWA below 3 mg/m³, respirable particles, and 10 mg/m³, inhalable particles (ACGIH recommendation for Particles (Insoluble or poorly soluble) Not Otherwise Specified (PNOS)).

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
Safety shower and eye bath should be provided. 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

Appearance
Light straw granules

Boiling point/range
Not applicable (decomposes)

Softening point/range
145-155°C

Flash point
>250°C (ASTM D93 PMOC)
9. Physical and chemical properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flammable/Explosion limits</td>
<td>Not flammable</td>
</tr>
<tr>
<td>Auto-ignition temperature</td>
<td>Not self-ignitable</td>
</tr>
<tr>
<td>Vapour pressure</td>
<td>Not applicable under standard conditions</td>
</tr>
<tr>
<td>Evaporation rate (ether=1)</td>
<td>Not applicable under standard conditions</td>
</tr>
<tr>
<td>Vapor density</td>
<td>Not applicable under standard conditions</td>
</tr>
<tr>
<td>Solubility:</td>
<td></td>
</tr>
<tr>
<td>- Solubility in water</td>
<td>Insoluble</td>
</tr>
<tr>
<td>- Solubility in other solvents</td>
<td>Soluble in polar solvents such as dioxane and DMF</td>
</tr>
<tr>
<td>Specific gravity</td>
<td>1.8</td>
</tr>
<tr>
<td>Decomposition temperature</td>
<td>347°C</td>
</tr>
</tbody>
</table>

10. Stability and reactivity

<table>
<thead>
<tr>
<th>Category</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stability</td>
<td>Stable under normal conditions</td>
</tr>
<tr>
<td>Materials to avoid</td>
<td>Acid anhydride, strong mineral acid, strong bases and oxidizing agents.</td>
</tr>
<tr>
<td>Conditions to avoid</td>
<td>Heating above decomposition temperature</td>
</tr>
<tr>
<td>Hazardous decomposition products</td>
<td>HBr</td>
</tr>
<tr>
<td>Hazardous polymerization</td>
<td>Will not occur</td>
</tr>
</tbody>
</table>
11. Toxicological information

Acute toxicity:
- Rat oral LD50 > 5,000 mg/kg
- Rabbit dermal LD50 >2,000 mg/kg
- Eye irritation (rabbit) Mild irritant
- Dermal irritation (rabbit) No data

Dermal sensitization Not a sensitizer

Chronic toxicity Not available

Mutagenicity Not mutagenic by the Ames Test

Carcinogenicity Not classified by IARC
Not included in NTP 12th Report on Carcinogens

Reproductive toxicity No data

12. Ecological information

Information on ecological effects No information available

13. Disposal considerations

Waste disposal Treat the solid waste and packaging waste via an incinerator equipped with an adequate gas cleaning system or send to a controlled landfill. 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

<table>
<thead>
<tr>
<th>Country</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>USA</td>
<td>Reported in the EPA TSCA Inventory.</td>
</tr>
<tr>
<td>Canada</td>
<td>Listed in DSL</td>
</tr>
<tr>
<td>EU</td>
<td>This product is a polymer. The monomers are reported in EINECS (Nos. 2213460 &amp; 2012369)</td>
</tr>
<tr>
<td>Japan</td>
<td>ENCS no. 7-1267,7-1288</td>
</tr>
<tr>
<td></td>
<td>ISHL no. 7-1267,7-1288</td>
</tr>
<tr>
<td>Australia</td>
<td>Listed in AICS</td>
</tr>
<tr>
<td>New Zealand Inventory</td>
<td>Listed in NZIoC</td>
</tr>
<tr>
<td>China inventory</td>
<td>Listed in IECSC</td>
</tr>
<tr>
<td>Korea</td>
<td>Listed in ECL (KE-23977)</td>
</tr>
<tr>
<td>Philippines</td>
<td>Listed in PICCS</td>
</tr>
</tbody>
</table>
16. Other information

GHS classification
Product is not subject to classification according to GHS. No label elements required.

This data sheet contains changes from the previous version in section(s)
10, 16

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

In an event of discrepancy between the contents of this MSDS and the English version of it, the English version shall prevail.
MATERIAL SAFETY DATA SHEET

Product name: F-2400
Product id: 9227
Revision date: 09/01/2012
Supersedes: 12/10/2008

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End of safety data sheet