Product name: CORONATE  HXR

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product name: CORONATE  HXR
General description: Modified polyisocyanate
Manufacturer: Nippon Polyurethane Industry Co., Ltd.
4-1-23, Shiba, Minato-ku, Tokyo Japan
Phone: +81-3-5439-8622
Urethane Derivatives Department, Sales Division
( Monday ~ Friday, Japan standard time 9:00 a.m. ~ 6:00 p.m.)

Emergency telephone number
CHEMTREC 24hr Emergency hot line 800-424-9300
(spill, leaks, fire or exposure)

2. COMPOSITION/INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>wt%</th>
<th>CAS registry</th>
</tr>
</thead>
<tbody>
<tr>
<td>Modified polyisocyanate</td>
<td>&gt; 99</td>
<td>28182-81-2</td>
</tr>
</tbody>
</table>

Control parameters
Hexamethylene diisocyanate (HDI)
- 0.005ppm ACGIH (TLV-TWA) 2001
- 0.01ppm DFG MAK (peak) 2001

HDI residual monomer is less than 0.2%

3. HAZARDS IDENTIFICATION

NFPA ratings (scale 0-4)
Health: 2,  Fire: 1,  Reactivity: 1

Major health hazards
Harmful if inhaled, skin irritation, eye irritation, allergic reactions, respiratory tract irritation

Physical hazard
May react on contact with water, containers may rupture or explode.

Physical form: Liquid,  Color: Pale yellow,  Odor: Faint odor

Potential health effect
May cause inflammation on the skin.

Eye contact
Short term exposure: irritation, tearing

Long term exposure: irritation, tearing

Ingestion
Short term exposure: vomiting
Product name: CORONATE HXR

Long term exposure: not available
Inhalation
Short term exposure: irritation, allergic reactions, wheezing asthma, lung congestion
Long term exposure: lung damage
Skin contact
Short term exposure: irritation, blisters, rash
Long term exposure: itching
Carcinogen status: IARC, not classified.

4. FIRST AID MEASURES

Eye contact
Hold eyelids apart and immediately flush eyes with plenty of water for at least 15 minutes. Seek immediate medical advice.

Ingestion
If swallowed, seek medical advice immediately. Wash out mouth with water. Do not induce vomiting.

Inhalation
Remove the patient immediately to an area with fresh air. Seek medical attention.

Skin contact
Remove all contaminated clothing and shoes immediately. Wash the contaminated area thoroughly with water followed by soap. If irritation persists or inflammation is caused, seek medical advice.

5. FIRE FIGHTING MEASURES

Flash point 518°F(270°C), determined by open cup flash test.
Autoignition point Not available
Range of explosion Not available
Flammability None
Combustibility Yes
Oxidizability None
Self reactivity None
Dust explosion None

General hazard
During a fire, aerosols or gases may be generated through decomposition.

Fire fighting instructions
Product name: CORONATE HXR

Positive pressure self-contained breathing apparatus and full protective clothing and gloves should be provided.
Splash water onto drums and facilities which are not on fire to avoid fire spreading and heat evolved.
After the fire is extinguished, neutralize the spilled material with decontaminant.
Restrict entry of unauthorized personnel.
Extinguishing media: dry chemical powder, carbon dioxide, water and foam.

6. ACCIDENTAL RELEASE MEASURES

General
Protective goggles, rubber gloves, and gas mask should be worn.
Restrict entry of unauthorized personnel.
Stay in windward position at the time of disposal.
The hazard area should be well-ventilated.
Safely stop discharge.

Small spill
Neutralize the leakage/spillage with decontaminant, or by admixing it with sand, clay or sawdust.
Dispose of in a closed chemical waste container.

Large spill
Admix with sand, clay or sawdust to prevent the spillage/leakage from further spreading out.
Dispose of in a chemical waste container. This container should not be closed.
Neutralize the residues with decontaminant. Wash the spillage area clean with water.

7. HANDLING AND STORAGE

Handling
The operator should be trained in handling this product.
Appropriate safety measures and protective equipment should be used for this operation.
Provide adequate ventilation and the operator should use protective equipment.
When the drum is pressurized, unscrew the bung slowly to release the pressure before taking it off.
This product should not be filled in an unwashed or wet container.
The use of fire is strictly prohibited in the work area.
Those who show allergic and sensitizing effects should not be in charge.

Storage
Keep container properly sealed and store indoors in a well ventilated area.
Product name: CORONATE HXR

Once opened, the container should be closed and sealed with nitrogen gas. If stored outdoors, the container should be covered with waterproof canvas sheet to avoid being exposed in the rain. The use of fire is strictly prohibited in the work area.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Engineering controls
Local exhaust ventilation should be provided for indoors use. Readily accessible eye and hand wash stations should be provided.

Personal protection
Chemical goggles, rubber gloves and suitable respiratory equipment.

Exposure limit: Refer to Section 2

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical form Liquid
Color Pale yellow
Odor Faint odor
Boiling point Not available
Vapor pressure Not available
Evaporation rate Not available
Freezing point Not available
Specific gravity 1.166 at 73°F (23°C)
Initial boiling point Not available
Viscosity 3,000 mm²/s at 73°F (23°C)
Solubility (water) Insoluble
Solubility (other) Soluble in toluene, ethyl acetate or acetone

Note: The above data are typical physical properties and should not be taken as a specification.

10. STABILITY AND REACTIVITY

Chemical stability (Condition to avoid)
High temperature and moisture

Incompatibility
This product reacts with materials with active hydrogen groups such as amines and alcohols.
Product name:  CORONATE HXR

**Hazardous decomposition product**
Reaction with water produces heat and carbon dioxide gas.

**Hazardous polymerization**
will occur.  It gets polymerized by alkaline materials or tertiary amines.

### 11. TOXICOLOGICAL INFORMATION

<table>
<thead>
<tr>
<th></th>
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<tbody>
<tr>
<td>Corrosive properties</td>
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<tr>
<td>Irritant properties</td>
<td></td>
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<tr>
<td>First irritation index on the skin (OECD method; rabbit)</td>
<td>1.67</td>
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<tr>
<td>Allergenic &amp; sensitizing effects</td>
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<tr>
<td>Acute toxicity</td>
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<tr>
<td>Sub-acute toxicity</td>
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<tr>
<td>Chronic toxicity</td>
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<td>Carcinogenic effects</td>
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<td>Mutagenic effects</td>
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<tr>
<td>Effects on the reproductive system</td>
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<td>Teratogenic effects</td>
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<td>Others</td>
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### 12. ECOLOGICAL INFORMATION

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<tbody>
<tr>
<td>Biodegradability</td>
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</tr>
<tr>
<td>Bioaccumulation</td>
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<td>Fish toxicity</td>
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<tr>
<td>Other information on ecotoxicity</td>
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</table>

### 13. DISPOSAL CONSIDERATIONS

**Disposal methods**
This product should be incinerated in an appropriate facility.  
This product should be treated by authorized agents professionally trained in disposing industrial waste.  
This product should be disposed of after forming solid foam through reaction with polyol.  
Mix this product with decontaminant to form urea compound through chemical reaction, and remove the toxicity by dripping the mix and being left to stand for 24 hours.  

**Handling empty container after use**
Empty drum should be left to stand with water and left unsealed for 24 hours.
Product name: CORONATE HXR

Water should subsequently be removed afterward.
Used container should be punctured and scrapped.

14. TRANSPORT INFORMATION

<table>
<thead>
<tr>
<th>Proper shipping name:</th>
<th>Modified polyisocyanate</th>
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<tbody>
<tr>
<td>Hazardous class:</td>
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</tr>
<tr>
<td>Identification number:</td>
<td>Not applicable</td>
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<tr>
<td>IMDG class:</td>
<td>Not applicable</td>
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</table>

Follow all the regulations in your country.
Be sure that the container is tightly sealed, that no leakage is found and that all the necessary indications are specified.
Filling, loading and extracting operations should be performed under the supervision of an authorized operator.
Nitrogen gas or dry air should be charged into the container for transportation after filling or extracting.

15. REGULATORY INFORMATION

<table>
<thead>
<tr>
<th>TSCA status</th>
<th>on TSCA inventory</th>
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<tbody>
<tr>
<td>On NLP number</td>
<td>500-060-2</td>
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<tr>
<td>U.S. Regulations</td>
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<tr>
<td>Cercla Sections 102a/103</td>
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<tr>
<td>Hazardous Substances</td>
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<td>(40 CFR 302.4)</td>
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<td>Extremely Hazardous</td>
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<td>Substances (40 CFR 355.30)</td>
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<tr>
<td>Sara Title III Section 304</td>
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<tr>
<td>311/312 Hazardous</td>
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<tr>
<td>Categories (40 CFR 370.21)</td>
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<td>Acute: Yes</td>
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<td>Chronic: Yes</td>
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<td>Fire: No</td>
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<tr>
<td>Reactive: No</td>
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<td>Sudden Release: No</td>
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<tr>
<td>Sara Title III Section 313</td>
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<tr>
<td>(40 CFR 372.65)</td>
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<td>OSHA Process Safety</td>
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<td>(29CFR1910.119)</td>
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<td>California Proposition 65</td>
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<td>Canadian Regulations</td>
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<td>WHMIS Classification</td>
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<td>National Inventory Status</td>
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<td>TSCA 12(b) Export Notification</td>
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</tbody>
</table>
Product name: CORONATE HXR

Regulatory information with regard to this substance in your country should be examined by your own responsibility.

16. OTHER INFORMATION

Reason for issue: Update to new format
Prepared by: Technical department
All the chemical materials may present unknown hazards and should be used in caution.
The information herein is given in good faith, but no warranty, express or implied is made.
Consult Nippon Polyurethane Industry Co., Ltd. for further information.