SAFETY DATA SHEET

TOSOH CORPORATION
3-8-2, Shiba, Minato-ku, Tokyo 105-8623, Japan
Phone: +81-3-5427-6340 Fax: +81-3-5427-5378

Date of printing: December 17, 2014
Version: T1
Date of revision: December 17, 2014
Date of issue: August 27, 2014

Product name: CORONATE HX-T

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product name	**CORONATE HX-T**
General description	Polyisocyanate solution
Company Identification	
Company name	TOSOH CORPORATION
Department	Functional Urethanes Department / Urethane Dept.
Address	3-8-2, Shiba, Minato-ku, Tokyo 105-8623, Japan
Telephone (Emergency telephone)	+81-3-5427-5393 / +81-3-5427-5379
	(Monday ~ Friday, Japan standard time 9:00 a.m. ~ 6:00 p.m.)

2. HAZARDS IDENTIFICATION

GHS classification of the substance or mixture

Physical Hazards

・ **Flammable liquids**	**Category 3**
・ **Flammable solids**	Not applicable

Health Hazards

・ **Acute toxicity (oral)**	Not classified
・ **Acute toxicity (skin)**	Not classified
・ **Acute toxicity (inhalation: gas)**	Not applicable
・ **Acute toxicity (inhalation: vapour)**	**Category 4**
・ **Acute toxicity (inhalation: dust, mist)**	**Category 4**
・ **Skin corrosion/irritation**	**Category 2**
・ **Serious eye damages/eye irritation**	**Category 2**
・ **Respiratory sensitization**	Classification not possible
・ **Skin sensitization**	Classification not possible
・ **Germ cell mutagenicity**	Classification not possible
・ **Carcinogenicity**	**Category 2**
・ **Reproductive toxicity**	**Category 1**

・ **Specific target organ toxicity; single exposure Category 1（Central nervous system）**
Category 2（Respiratory system，Kidney，Liver，Lung）
Category 3（Respiratory tract irritation）

・ **Specific target organ toxicity; repeated exposure**

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Category 2（Respiratory system，Nervous system）

- **Aspiration hazard** Not classified

Environmental Hazards

- **Aquatic toxicity (acute)** **Category 2**
- **Aquatic toxicity (chronic)** Classification not possible

Section is not listed, it can not be excluded from 'Not applicable' or 'Classification not possible'

GHS label elements including precautionary statements

Symbol :

Signal word : Danger

Hazard statement :

- **Flammable liquid and vapour**
- **Harmful if inhaled**
- **Causes skin irritation**
- **Causes serious eye irritation**
- **Suspected of causing cancer**
- **May damage fertility or the unborn child**
- **Causes damage to Central nervous system**
- **May cause damage to organs（Respiratory system，Kidney，Liver，Lung）**
- **May cause respiratory irritation**
- **May cause damage to organs through prolonged or repeated exposure（Respiratory system，Nervous system）**
- **Toxic to aquatic life**

Precautionary Statements

Prevention

- Obtain special instructions before use.
- Do not handle until all precautions have been read and understood.
- Keep container tightly closed.

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(There is a danger of explosion if the carbon dioxide generated when water enters.)

- Do not handle in people who cause allergic reactions.
- Keep away from heat/sparks/open flames/hot surfaces. No smoking.
- Ground/bond container and receiving equipment.
- Use only non-sparking tools.
- Use explosion-proof electrical/ventilating/lighting/equipment.
- Take precautionary measures against static discharge.
- Use only outdoors or in a well-ventilated area.
- Do not eat, drink or smoke when using this product.
- Do not breathe dust/fume/gas/mist/vapour/spray.
- Wear protective gloves/protective clothing/eye protection/face protection.
- Wash hands thoroughly after handling.
- Avoid release to the environment.

Response

- In case of fire: Use dry chemical powder, carbon dioxide, foam, large volume of water spray.
- If swallowed: Rinse mouth with water. Do not induce vomiting. To contact a doctor immediately.
- If inhaled: Remove victim to fresh air and keep at rest in a position comfortable for breathing. To contact a doctor immediately.
- If on eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. To contact a doctor immediately.
- If on skin (or hair): Remove/take off immediately all contaminated clothing. Rinse skin with water/shower. To contact a doctor immediately.
- If on skin: Wash with plenty of soap and water.
- If exposed or concerned, or if you feel unwell: Get medical advice/attention.
- Wash contaminated clothing before re-using.
- When leaking out, collect as much as possible to the container and so on. After that, spray and neutralize with an ammonia water, alcohol and so on, and then absorb it with sands.

Storage

- Store container in cool place/ well-ventilated place.

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Disposal

- Dispose of contents/container to waste in accordance with local / regional / national / international regulations (to be specified).

3. COMPOSITION / INFORMATION ON INGREDIENTS

Substance / Mixture Mixture

Chemical name Polyisocyanate solution

【Components and Contents】

Chemical name	Contents	CAS No.
Butyl acetate	12 %	123-86-4
Xylene (contain Ethyl benzene)	12 %	1330-20-7
Modified polyisocyanate	76 %	Trade secret

【HAZARDOUS INGREDIENT(s) 】

Chemical name	Contents	CAS No.
Butyl acetate	12 %	123-86-4
Xylene	4.6 %	1330-20-7
Ethyl benzene	7.0 %	100-41-4
Hexamethylene diisocyanate (HDI)	< 1 %	822-06-0

4. FIRST AID MEASURES

If inhaled

Remove victim to fresh air and keep at rest in a position comfortable for breathing.
Get medical advice/attention immediately.

If on skin

Remove / Take off immediately contaminated clothing and shoes etc. Rinse the part that touches the product, by washing with water or lukewarm water flow. Wash with soap and water. Seek medical advice or attention, if there are change in the appearance or pain persists.

If on eyes

Even if very small contact, rinse with clean water for at least 15 minutes, and seek ophthalmologist's advice/attention. During the eyewash, open the eyelid well with your fingers, then wash well the eyeball and the eyelid with water.

If swallowed

Rinse mouth well. Spit it in person voluntarily if possible, to vomit.
Seek medical advice/attention immediately.

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5. FIRE FIGHTING MEASURES

Suitable extinguishing media :

Dry chemical powder, carbon dioxide, foam, large volume of water spray.

Unsuitable extinguishing media : Water jet

Specific hazards during fire :

There is a risk of generating a hazard gas in a fire.

Specific extinction method :

Wear self-contained breathing apparatus and protective gloves, because cracked gas and steam are generated in the case of fire. Water is drained off to the drum, container etc. that have not ignited, and it tries to prevent fire spreading, overheating, and explosion of containers. After the fire is extinguished, neutralize the spilled material with decontaminant. Do not let outsiders enter the place fire.

Special protective for fire-fighters :

In the extinction work, wear self-contained breathing apparatus and protective gloves, because cracked gas and steam are generated.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions :

Immediately remove all sources of ignition and flammable material. In case of fire, use powder or foam as extinguishing media. Wear safety glasses, rubber gloves, a gas mask for organic gas. Restrict entry of unauthorized personnel. To work from the windward. Evacuate people downwind. Better ventilation of the place spilled. Temporary leak repair parts, stop the leak.

Environmental precautions :

Do not flow spillage directly into rivers or sewage. Adhered and collected waste material should be promptly disposed of, in accordance with appropriate laws and regulations.

Methods and materials for containment and cleaning up :

(Small spill)

Sprayed with a neutralizing agent to neutralize. Remove adsorbed sand, earth, sawdust, etc. If wiping rags, waste paper, etc., remove and store in a container with a lid.

(Large spill)

As spilled liquid can not spread, enclosed sand, earth, sawdust, etc. Recovered in the liquid container as much as possible. Collection container must not be sealed. Which could not be recovered sprayed with a neutralizing agent to neutralize or Removed by the above method. Wash the spillage area clean with water.

Measures to prevent secondary disasters :

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Promptly except near sources of ignition and prepare a fire extinguishing agent.
Using a safety tool that does not generate a spark.

7. HANDLING AND STORAGE

Handling

The operator should be trained in handling this product.

Technical measure

Wear appropriate protective goggles, rubber gloves, a gas mask for organic gas.
Thoroughly ventilate the workplace, workers wear protective.

Notes

Those who show allergenic and sensitizing effects should not be in charge.

Safety treatment notes

If a higher pressure in the container, remove the lid and remove the pressure slightly loosen the lid. Do not the filling of container this products to the unwashed containers and attached water containers. Take precautionary measures against static discharge. Working space is a non smoking. Forbid to use the open flame heating element, high-temperature heating elements.

Storage

Appropriate safekeeping condition

Store in indoors well-ventilated. Keep container tightly closed. Once a container is opened, the container should be sealed with dry nitrogen or dry air (dew point < -30℃) and be closed tightly. 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 storage area.

Packaging materials

Excellent corrosion resistance in a suitable material, use containers with airtight packaging.
Containers which are prescribed in Fire and Disaster Management Act and UN transport regulations.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Facility and equipment measures

Facilities in where this material is handled should be structured with the perfectly closed system. The equipment for eye washing and restroom is installed near the handling place.

Control limit

Butyl acetate	:	150 ppm
Xylene	:	50 ppm
Ethyl benzene	:	20 ppm

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Occupational exposure limits

Butyl acetate	:	150	ppm	ACGIH	(TLV-TWA) 2007
	:	200	ppm	ACGIH	(TLV- STEL) 2007
	:	100	ppm	JSOH	(TLV-TWA) 2007
Xylene	:	100	ppm	ACGIH	(TLV-TWA) 2007
	:	150	ppm	ACGIH	(TLV- STEL) 2007
	:	50	ppm	JSOH	(TLV-TWA) 2007
Ethyl benzene	:	100	ppm	ACGIH	(TLV-TWA) 2007
	:	125	ppm	ACGIH	(TLV- STEL) 2007
	:	50	ppm	JSOH	(TLV-TWA) 2007
Hexamethylene diisocyanate (HDI)	:	0.005	ppm	ACGIH	(TLV-TWA) 2007
	:	0.005	ppm	DFG MAK	(TLV-TWA) 2007
	:	0.005	ppm	JSOH	(TLV-TWA) 2007

*JSOH: Japan Society of Occupational Health

Personal protective equipment

Respiratory protection :	Respiratory air : JIS T 8155, Gas mask : JIS T 8152, Air-supplied respirator : JIS T 8153
Hand protection :	Safety gloves made from rubbers or plastics (impermeable)
Eye protection :	Safety glasses with side version or protection goggles
Skin and body protection :	Long sleeve protective work clothes and Long safety boots

Hygiene measures

Contaminated protective clothing, protective equipment should be replaced as soon as possible.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	Liquid
Color	Pale yellow
Odor	Aromatic odor
PH	—
Boiling point	—
Freezing point	—
Flash point	35 ℃ determined by closed cup flash test. (Sealed Seta)
Explosion limit	—
Vapour pressure	—

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Vapour density	—
Specific gravity	1.082×10^3 (kg/m^3) at 23℃
Solubility (water)	Insoluble
Solubility (other)	Soluble in toluene, ethyl acetate or acetone
Octanol /water partition coefficient	
For Butyl acetate	: log Pow 1.82 (octanol/water partition coefficient)
For Xylene	: log Pow 2.80 (octanol/water partition coefficient)
Viscosity	80 mm^2/s at 25℃

10. STABILITY AND REACTIVITY

Stability	Flammability	some
	Ignition quality	na
	Oxidizing	na
	Self-reactive, Explosiveness	na
	Explosive dust	na
	Other	na

Reactivity

Exothermic react with water forming CO_2. Exothermic react with active-hydrogen compound (alcohols, amine and so on). The polymerization reaction with an alkaline substance, a tertiary amine and so on.

11. TOXICOLOGICAL INFORMATION

Acute Toxicity

For Butyl acetate

Oral (rat) : Not classified : LD50 = 14.13g/kg (ACGIH, 2001)
Skin (rabbit) : Not classified : LD50 = 17,600mg/kg (RTECS, 2004)
Inhalation (gas) : Not applicable : Liquid (GHS definition)
Inhalation (vapour) (rat) : Category 3 : LC50 = 2,000ppm (ACGIH, 2001)
Classification by the reference value of gas (90% or less of the saturated vapour pressure concentration)
Inhalation (dust, mist) (rat) : Category 4 : LC50 = 391ppm (1.85mg/L) (ACGIH, 2001)

For Xylene

Oral (rat) : Category 5 : LD50 = 3,500mg/kg (CAPSAR, 1993) (Low data)
(4,300mg/kg (Ministry of the Environment Risk Assessment Vol.1 (2002))
Skin (rabbit) : Classification not possible : Valid data can not be obtained.

(Skin (rabbit) : Category 5 or Not classified : LD50 ≧ 4,350mg/kg (IUCLID, 2000))

Inhalation (gas) : Not applicable : Liquid (GHS definition)
Inhalation (vapour) (rat) : Not classified : LC50 = 29.08mg/L/4hr (correspond to 6,700ppm)

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(Ministry of the Environment Risk Assessment Vol.1 (2002))
: 'Vapour that dose not contain most of the mist.' (90% or less of the saturated vapour pressure concentration : 8,000ppm (At the saturated vapour pressure 0.8kPa at 20℃))

For Ethyl benzene

Oral (rat) : Category 5 : LD50 = 3,500mg/kg (EHC 186, 1996) (Low data)
(4,769mg/kg (ATSDR, 1999))
Skin (rabbit) : Not classified : LD50 = 15,400mg/kg (ACGIH (7TH, 2002))
Inhalation (gas) : Not applicable : Liquid (GHS definition)
Inhalation (vapour) (rat) : Category 4 : LC50 = 17.2mg/L (4,000ppm)
(ATSDR (1999), EHC 186 (1996))
: consider 'Vapour that dose not contain the mist.' (90% or less of the saturated vapour pressure concentration : 9,000ppm (At the saturated vapour pressure 0.9kPa at 20℃))

For Hexamethylene diisocyanate (HDI)

Oral (rat) : Category 4 : LD50 = 747mg/kg (calculated value)
based on CERI Hazard data 2000-50, 2001 (738, 960) and SIDS, 2004 (746, 959)
Skin (rabbit) : Category 3 : LD50 = 593mg/kg (adopt low value)
based on CERI Hazard data 2000-50, 2001 (593), and SIDS, 2004 (599)
Inhalation (gas) : Not applicable : Liquid (GHS definition)
Inhalation (vapour) (rat) : Category 1 [Vapour = mist is not mixed almost]
: LC50 = 20ppm/4hr (calculated value)
based on ATSDR,1998 (0.31mg/L), Ministry of the Environment Risk Assessment Vol.2, 2003 (0.06mg/L) and SIDS, 2004 (0.124 mg/L, 0.31 mg/L, 0.15mg/L)
: 'Vapour that dose not contain most of the mist.' (90% or less of the saturated vapour pressure concentration : 70ppm (CERI hazard data 2000-50 (2001)) At the saturated vapour pressure 0.007kPa at 25℃)

Skin corrosion /irritation

For Butyl acetate

(man) MILD SKIN IRRITATION (AGCIH, 2001) : Category 3

For Xylene : Category 2A

(rabbit) Moderate irritation (CERI / NITE, Written hazard assessment No.62, 2004)

For Ethyl benzene : Category 3

Mild skin irritation (Applied to the skin for 24hours) (ATSDR, 1999)

For Hexamethylene diisocyanate (HDI)

(rabbit) Substance is corrosive to the skin. (SIDS, 2004) : Category 1A - 1C

Serious eye damage/ eye irritation

For Butyl acetate

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Opacity of the cornea recovered on the second day. Redness of the conjunctiva recovered day7and day14. (ECETOC report) : Category 2B

For Xylene : Category 2A

(rabbit) Moderate irritation (CERI / NITE, Written hazard assessment No.62, 2004)

For Ethyl benzene : Category 2B

(rabbit) Mild eye irritation : Eye irritation test results = Irritating minor in conjunctiva. No effect on the cornea or showed damage to the recovery of the cornea. (EHC 186, 1996)

For Hexamethylene diisocyanate (HDI)

(rabbit) Substance is corrosive to the eyes. (SIDS, 2004) : Category 1
(Test results compliant with OECD Test Guideline 405)

Respiratory/skin sensitization

For Butyl acetate

respiratory sensitization) : Classification not possible
There are no respiratory sensitization data.

skin sensitization : Not classified
Skin sensitization does not demonstrated.
(Ministry of the Environment Risk Assessment Vol.3 (2004))

For Xylene

respiratory sensitization : Unclassified : No infomation

skin sensitization : Unclassified : No information

For Ethyl benzene

skin sensitization : Classification not possible (ACGIH) : Lack of data
((man:volunteer) No skin sensitization (ACGIH (7^{TH}, 2002), EHC 186 (1986)))

For Hexamethylene diisocyanate (HDI)

respiratory sensitization : Category 1 [There is a respiratory sensitization.]
(man) Induce allergic asthma, hypersensitivity pneumonitis, contact hypersensitivity.
CERI Hazard data 2000-50 (2001), Ministry of the Environment Risk Assessment Vol.2 (2003), AGCIH (7^{TH}, 2001)

skin sensitization : Category 1 [There is a skin sensitization.]
(guinea pig) Skin sensitization test results were positive. (SIDS, 2004)
'There is a skin sensitization.' : Japanese Society of Occupational and Environmental Allergy / Special committee

Germ cell mutagenicity

For Butyl acetate

There was not enough information. (IN VIVO) : Classification not possible
(IN VITRO TEST = NEGATIVE)

For Xylene : Not classified

(man) Heritable epidemiology = Negative, No heritable mutagenicity test, No germ cells IN VIVO mutagenicity test, Somatic IN VIVO mutagenicity test (Micronucleus test, Chromosome

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test) = Negative, No germ cells IN VIVO genotoxicity test.
(CERI / NITE, Written hazard assessment No.62 (2004), CAPSAR (1993), IARC (1999), NTP DB (Access on December 2005))

For Ethyl benzene : Not classified
SIDS (2005) : Negative (IN VIVO somatic cell mutagenicity test (Micronucleus test))
(No heritable mutagenicity test, No germ cells IN VIVO mutagenicity test)

For Hexamethylene diisocyanate (HDI)
: Not classified
No data heritable mutagenicity test. No data Germ cell IN VIVO mutagenicity test.
Somatic cell IN VIVO mutagenicity tests (micronucleus test) is negative. (SIDS, 2004)

Carcinogenicity

For Butyl acetate
There was no information. (IARC, ACGHI) : Classification not possible

For Xylene : Not classified
: classified as A4 (ACGIH, 2001), classified as Group 3 (IARC, 1999)

For Ethyl benzene : Category 2
: classified as 2B (IARC, 2000) , classified as A3 (ACGIH, 2001)

For Hexamethylene diisocyanate (HDI)
There was no existing classification and no information. : Classification not possible

Reproductive toxicity

For Butyl acetate
There was no significant difference compared with the control group. : Not classified
Ministry of the Environment Risk Assessment Vol.3 (2004), ACGIH (2001)

For Xylene : Category 1B
(mouse) Developmental toxicity study = 'fetus' Weight loss, Hydrocephalus, in the dose there is no general toxicity to the parent animals.
(CERI / NITE, Written hazard assessment No.62 (2004), EHC 190 (1997), IRIS (2003))

For Ethyl benzene : Category 1B
(mouse, rat) Teratogenicity test = Fetal toxicity (Deformation of the urinary), in the dose without maternal toxicity.
(CERI hazard data 96-41 (1998), SIDS (2005), Ministry of the Environment Risk Assessment Vol.1 (2002))

For Hexamethylene diisocyanate (HDI)
There was no impact on the occurrence of the next generation of parent animals and breeding performance. (SIDS, 2004)

Specific target organ toxicity-single exposure

For Butyl acetate
Category 1 (Central nervous system) : (man) : (ACGIH, 2001)
Category 2 (Lung) : (animal) : Pulmonary edema was seen by animal studies.

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Category 3 (Respiratory tract irritation) : Irritation of the respiratory.

For Xylene

Category 1 (Respiratory system, Liver, Central nervous system, Kidney)

Category 3 (Narcotic effects)

(man) Irritation of the throat, Pulmonary congestion severe, Alveolar hemorrhage and Pulmonary edema, Congestion associated with the enlargement of the liver and Hollowing out of hepatocytes of centrilobular, Petechiae Swelling and Damage to nerve cells accompanied the disappearance of Nissl bodies, Cyanosis of the extremities, Transient increase in serum transaminase activity, Increase in blood urea, Urinary clearance reduction of endogenous creatinine, Liver damage and Severe renal impairment, Memory loss, Coma. (CERI / NITE, Written hazard assessment No.62, 2004)

Lung congestion, Edema, Focal alveolar hemorrhage. (Ministry of the Environment Risk Assessment Vol.1, 2002)

(animal) Deep narcotic effects (EHC 190, 1997)

Classification result of the above is the data of Xylene mixture. (contain Ethyl benzene, Toluene, etc.)

For Ethyl benzene

Category 2 (Central nervous system)

Category 3 (Respiratory tract irritation)

(animal) There are side effects to the central nervous system in guidance value range of Category 2. There is a respiratory tract. (CERI hazard data 96-41, 1998)

For Hexamethylene diisocyanate (HDI)

Category 1 (Respiratory system)

(rat) Inhalation exposure, pulmonary edema and pneumonia were seen. (ATSDR, 1998)

(Experimental animal) There are effects in guidance value range of Category 1.

Specific target organ toxicity-repeated exposure

For Butyl acetate

There was not enough information. : Classification not possible

For Xylene

: Category 1 (Respiratory system, Nervous system)

(man) Irritation of the eyes and nose, Thirst (DFGOT Vol.15, 2001)

Chronic headache, Chest pain, Abnormal EEG, Dyspnea, Cyanosis of the hand, Fever, White blood cell count decreased, Discomfort, Decline in lung function, Decline in ability to work, Disability, Mental disorder (CERI / NITE, Written hazard assessment No.62, 2004)

Classification result of the above is the data of Xylene mixture. (contain Ethyl benzene, Toluene, etc.)

For Ethyl benzene : Classification not possible : Lack of data

For Hexamethylene diisocyanate (HDI)

Category 1 (Respiratory system) : CERI Hazard data 2000-50 (2001)

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(man) Irritation of the eyes, nose and throat, and discomfort of cough and chest.
(rat) There are inflammation of the windpipe and there are necrosis of the epithelium of the nasal turbinates, and squamous metaplasia of the nasal turbinates. In the lung, there are epithelial formation and interstitial pneumonia. In the nasal cavity, there are degeneration of the olfactory epithelium, and hyperkeratosis and ulceration or erosion.

Aspiration hazard

For Butyl acetate

There was no data for chemical pneumonia. : Classification not possible

Kinematic viscosity (20℃) = 0.838mm^2/sec (calculated value)

For Xylene = o-Xylene, m-Xylene, p-Xylene : Category 2
If swallow, there is risk of chemical pneumonitis caused by aspiration. (ICSC (J), 2002)

For Ethyl benzene = Hydrocarbon
: Category 1 : If swallow, there is risk of chemical pneumonitis caused by aspiration. (ICSC (J), 1995) Kinematic viscosity = 0.74mm^2/s at 25℃

For Hexamethylene diisocyanate (HDI) : No available

12. ECOLOGICAL INFORMATION

Aquatic Toxicity

For Butyl acetate

(Acute) Fish (Bluegill) LC50 = 100,000 μg/L/96hr : Category 3
(Ministry of the Environment Risk Assessment Vol.1 (2002))

(Chronic) Rapid degradation (Degree of decomposition by BOD = 98% (IUCLID, 2000))
Can be estimated 'Bioaccumulation is low.' : Not classified
(LOG KOW = 1.78 (PHYSPROP DATABASE, 2005))

For Xylene

(Acute) Fish (Rainbow trout) LC50 = 3.3 mg/L/96hr : Category 2
(CERI / NITE, Written hazard assessment, 2005)

(Chronic):Category 2: Acute toxicity = Category 2,Can be estimated 'Bioaccumulation is low.'
(LOG KOW = 3.16 (Physprop Datebase, 2005)),
There is no rapid degradation. (Degree of decomposition by BOD = 39%
(CERI / NITE, Written hazard assessment 2006))

For Ethyl benzene

(Acute) Crustacean (Brine shrimp) LC50 = 0.4mg/L/96hr : Category 1
(CERI / NITE, Written hazard assessment (Preliminary version), 2006)

(Chronic) : Not classified

There is rapid degradation. (In labile, this material is vaporized quickly in water. (SIDS, 2005))

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Can be estimated 'Bioaccumulation is low.' (LOG KOW = 3.15 (Physprop Datebase, 2005))

For Hexamethylene diisocyanate (HDI)

(Acute) Crustacean (Daphnia magna) EC50≧89.1mg/L/48hr (SIDS, 2004) : Not classified

(Chronic) Not poor water solubility, Acute toxicity is low : Not classified
(Aqueous solubility = 117mg/L (PHYSPROP DATABASE, 2005))

13. DISPOSAL CONSIDERATIONS

The remainder waste (Disposal of this product)

Dispose of contents/container to waste treatment company having the official approval of laws and regulation. Incinerated in appropriate facilities.

Pollution container and packing

Empty container filled with water and allowed to stand for 2 days (Should not be sealed), then, disconnect the water. Used container should be punctured and scrapped, so that it is not used for any other purpose.

14. TRANSPORT INFORMATION

International Regulations

Land : Transport in accordance with your country and regions regulations.
(RID, ADR, DOT etc.)

Sea : Transport in accordance with IMDG Code.

Air : Transport in accordance with ICAO-TI/ IATA-DGR.

UN number:	1866
Proper shipping name:	Resin solution, flammable (Polyisocyanate solution)
Hazard class:	3 Flammable liquid
Packing group:	Ⅲ
Marine Pollutant:	Not applicable
IMDG class:	3 Flammable liquid

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.

Ship hazardous materials transportation and storage regulations based on the Ship Safety Act: It corresponds to "poison" hazardous materials, if you want to maritime transport, and transport you necessity to take measures in accordance with the law Ship Safety.

TOSOH CORPORATION
3-8-2, Shiba, Minato-ku, Tokyo 105-8623, Japan
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Product name: CORONATE HX-T

15. REGULATORY INFORMATION

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

16. OTHER INFORMATION

This SDS was prepared sincerely on the basis of the information we could obtained, however, any warranty shall not be given regarding the data contained and the assessment of hazards and toxicity. Prior to use, please investigate not only the hazards and toxicity information but also the laws and regulations of the organization, area and country where the products are to be used, which shall be given the first priority, products are supposed to be used promptly after purchase in consideration of safety.

Some new information or amendments may be added afterwards. If the products are to be used far behind the expected time of use or you have any questions, please feel free to contact us. The stated cautions are for normal handling only. In case of special handling, sufficient care should be taken, in addition to the safety measures suitable for the situation. All chemical products should be treated with the recognition of "having unknown hazards and toxicity", which differ greatly depending on the conditions and handling when in use and/or the conditions and duration of storage.

The products must be handled only by those who are familiar with specialized knowledge and have experience or under the guidance of those specialists throughout use from opening to storage and disposal. Safe conditions of use shall be set up on each user's own responsibility.