

## Safety Data Sheet

Issued Date: October 28, 2008  
Revised Date: September 18, 2009

## 1. INFORMATION ON PRODUCTS AND SUPPLIER.

PRODUCT NAME	ThreeBond 2082E Hardener
ISSUED NUMBER	kenkyukanri 603-5
NAME OF MANUFACTURER	Three Bond Co.,Ltd
ADDRESS	1456, Hazama-cho, Hachioji-shi, Tokyo, Japan
NAME OF SECTION	Administration Department Research Division
TEL / FAX NUMBER	81-42-661-1367/81-42-669-7235
EMERGENCY TEL NUMBER	81-42-661-1367
RECOMMENDED USE AND RESTRICTION ON USE	Adhesive and Sealant

## 2. HAZARDS IDENTIFICATION

## GHS CLASSIFICATION

PHYSICAL HAZARDS	Flammable liquids	Not classified
HEALTH HAZARDS	Acute toxicity (Oral)	Category 4
	Skin corrosion/irritation	Category 1A
	Serious eye damage/Eye irritation	Category 1
	Reproductive toxicity	Category 1B
ENVIRONMENTAL HAZARDS	Acute hazards to the aquatic environment	Category 1
	Chronic hazards to the aquatic environment	Category 1

\*Not above mentioned hazard classification items; Not classified or Not classifiable.

## LABEL ELEMENTS

## SYMBOL



## SIGNAL WORD

Danger

## HAZARD STATEMENT

H301 Toxic if swallowed  
 H314 Causes severe skin burns and eyes damage  
 H318 Causes serious eye damage  
 H360 May damage fertility or the unborn child  
 H400 Very toxic to aquatic life  
 H410 Very toxic to aquatic life with long lasting effects

## NOTICE

## SAFETY MEASURE

Wear appropriate chemical protectors; gloves, glasses when handling  
 Use personal protection and ventilation equipment to avoid exposure, if necessary.

## FIRST AID MEASURE

If you feel unwell, remove victim to fresh air and keep at rest in a position comfortable for breathing.  
 If on skin: Wash with plenty of soap and water. Remove contaminated clothing.  
 If skin irritation or rash occurs: Get medical advice, attention.  
 If in eyes: Rinse cautiously with water for several minutes.  
 Remove contact lenses, if present and easy to do. Continue rinsing. Get medical advice, attention.

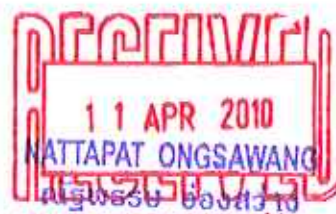
## STORAGE

Keep container tightly closed. Protect from direct sunlight. Store the product moderate temperature.

## DISPOSAL

Solicit waste disposal management experts.

GHS Hazard Communication is mentioned in accordance with Japanese Law.



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## 3. COMPOSITION / INFORMATION ON INGREDIENTS

SUBSTANCE/MIXTURE

Mixture

## CHEMICAL COMPOSITION

INGREDIENTS	Wt%	Formula	CAS Number
Modified polyamideamine, Other hardener	70 - 80	—	—
Triethylene tetramine	2.3	$C_6H_{18}N_4$	112-24-3
Titanium dioxide	5 - 15	$TiO_2$	13463-67-7
Nonylphenol	6.5	—	25154-52-3
Silica	1 - 10	$SiO_2$	—
Inorganic filler	1 - 5	—	—

IMPURITIES AND STABILIZING ADDITIVES WHICH ARE THEMSELVES CLASSIFIED  
AND WHICH CONTRIBUTE TO THE CLASSIFICATION OF THE SUBSTANCE

No information

## 4. FIRST AID MEASURES

IF INHALED

In case of poisoning, remove victim to fresh air, calm down, keep warm then get medical advice, attention.

IF ON SKIN

Wash soap and water. Remove contaminated clothing.

IF IN EYES

If skin irritation or rash occurs: Get medical advice, attention.

Rinse cautiously with water for several minutes.

Remove contact lenses, if present and easy to do. Continue rinsing, then get medical advice, attention.

IF SWALLOWED

Rinse mouth.

Get medical advice, attention.

## 5. FIRE FIGHTING MEASURES

EXTINGUISHING MEDIA

Dry powder, Foam of resistant alcohol, Carbon dioxide gas, Dry sand, Spray water

SPECIFIC HAZARDS ARISING FROM  
THE CHEMICAL

May produce poisonous and irritated gasses upon a fire.

SPECIFIC FIRE FIGHTING  
MEASURES

Workers should wear appropriate protectors (glasses, cloths, mask for poisonous gasses, etc.), then extinguish should be performed up wind.

## 6. ACCIDENTAL RELEASE

PERSONAL PRECAUTIONS, PROTECTIVE EQUIPMENT AND EMERGENCY PROCEDURES

Wear appropriate protection equipment (refer to 8. Exposure Control/Personal Protection) to avoid contact to eyes, skin and inhalation.

ENVIRONMENTAL PRECAUTIONS, RECOVERY/NEUTRALIZATION

Caution not to allow product flow into rivers and not to effect to environment.

METHODS AND MATERIALS FOR CONTAINMENT AND CLEANING UP

In case of a small spill, absorb with dry sand, soil, sawdust, cloth, etc., then place in a sealable container.

In case of large spills, dike and prevent overflow. Guide to a safe place then dispose properly.

SECONDARY ACCIDENT PREVENTION MEASURE

All ignition sources should be quickly removed. (No smoking around, prohibit sparks or fire sources)

## 7. HANDLING AND STORAGE

HANDLING

ENGINEERING MEASURES

Wear protection equipment; perform engineering measures written in 「8. Exposure Control/Personal Protection」.



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LOCAL ENTILATION  
/TOTAL VENTILATION

Perform local and total ventilation written in 「8. Exposure Control/Personal Protection」.

SAFETY HANDLING  
PRECAUTIONS

Take care of using fire

STORAGE

ENGINEERING MEASURES

Keep container tightly closed. Protect from direct sunlight. Store the product moderate temperature.

Refer to the technical data, specifications, and a product label about handling range of temperature.

CONTAINER AND PACKAGEING  
MATERIALS

Keep only in original container. Do not transfer the product to another bottle.

### 8. EXPOSURE CONTROL / PERSONAL PROTECTION

CONTROL PARAMETERS

	ACGIH TLV	OSHA PEL
Titanium dioxide	10 ppm	10 ppm(total dust)
	Not established	Not established
Silica	Not established	Not established

ENGINEERING MEASURES

If handling this product in a closed workshop, a generating sources are enclosed, or countermeasure to use a local mechanical ventilation system, etc.

Place a safety shower, hand washing sink and an eye bath near work area and clearly marked.

PERSONAL PROTECTION EQUIPMENT

RESPIRATORY PROTECTION

Mask to prevent organic gas poisoning, if necessary.

HAND PROTECTION

Wear appropriate protective gloves (Polyethylene, rubber, etc., solvent impervious materials).

EYE PROTECTION

Use eye protection. (Goggles as better)

SKIN AND BODY PROTECTION

Wear personal protection apron, boots, if necessary. Do not work with short sleeve shirts.

SANITARY MEASURES

Wash hands thoroughly after handling. Do not eat, drink or smoke when using this product.

### 9. PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL STATE

APPEARANCE

Paste

COLOUR

Gray

ODOR

Specific smell

FLASHPOINT

112°C

SPECIFIC GRAVITY (DENSITY)

1.07

SOLUBILITY

Slightly soluble in water

VISCOSITY

150 Pa·s

PHYSICAL STATE as Titanium dioxide

MELTING POINT/FREEZING POINT

1640°C

SPECIFIC GRAVITY (DENSITY)

4.17

SOLUBILITY

Insoluble in water

Soluble in Sulfuric acid or alkali

DISCOMPOSITION TEMPRATURE

≥3000°C

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## PHYSICAL STATE as Silica

MELTING POINT/FREEZING POINT 1710 °C, 1600-1750 °C(Sublimation at 1750 °C)

BOILING POINT 2230°C  
(INITIAL AND RANGE)

SPECIFIC GRAVITY (DENSITY) 2.65(20°C)

SOLUBILITY Water: 0.2g(100ml, 3N Ammonia water, 18 °C)

Slightly soluble in water

## 10. STABILITY AND REACTIVITY

STABILITY Stable in normal conditions.

POSSIBLY HAZARDOUS REACTION Mixing with epoxy, isocyanate compounds, it reacts with generating a great deal of heat.

Mixing with strong oxidizers, suddenly generates to great deal of heat.

CONDITION TO AVOID Heating.

INCOMPATIBLE MATERIALS Epoxy compounds, Isocyanate compounds or Strong oxidizers.

HAZARDOUS DECOMPOSITION Incineration may produce poisonous gasses (Carbon monoxide, Ammonia, NOx, etc.) upon condition.

## 11. TOXICOLOGICAL INFORMATION

## HEALTH HAZARDS

ACUTE TOXICITY No data as product

SKIN CORROSION/IRRITATION No data as product

Information on GHS Hazard Communication is in accordance with Japanese Law

## 12. ECOLOGICAL INFORMATION

## ENVIRONMENTAL HAZARDS

HAZARDZ TO THE AQUATIC ENVIRONMENT No data as product

MOBILITY No data

Information on GHS Hazard Communication is in accordance with Japanese Law

## 13.DISPOSAL

METHOD OF DISPOSAL To dispose product, solicit waste disposal management experts.  
Prohibited that to dispose the waste or waste liquid containing the product in the river, etc., to reclaim, to dump the product as it is.  
Handle in used container and cloth same as above.

## 14.TRANSPORT INFORMATION

## INTERNATIONAL REGULATION

SEA TRANSPORTATION Follows IMO regulation

UN number 2735

Proper shipping name Polyamines, liquid, corrosive, n. o. s.

UN Classification 8

UN packing group III

AIR TRANSPORTATION Follows ICAO/IATA regulation

UN number 2735

Proper shipping name Polyamines, liquid, corrosive, n. o. s.

UN Classification 8

UN packing group III

## DOMESTIC REGULATION

LAND TRANSPORTATION Follows Japanese Law

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UN Classification	8
UN packing group	III
AIR TRANSPORTATION	Follows Japanese Law
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Proper shipping name	Polyamines, liquid, corrosive, n. o. s.
UN Classification	8
UN packing group	III
EMERGENCY ACCIDENTAL MEASURE	
Yellow card number	153

### 15. REGULATORY INFORMATION

Handle in accordance with applicable laws and regulations.

### 16. OTHER INFORMATION

Portions of the above evaluation of dangerous and harmful effects may be insufficient, please perform adequate investigation.

The content in this report is based on information which was available as of the Effective date.

But Three Bond Co.,Ltd. and its affiliates are not responsible for guaranteeing the above data and evaluations.

The above data assumes usage under normal working conditions.

In case of special handling is required, please handle with suitable safety measures according to the application and usage.

The content in this report may change due to new evaluation and tests, etc.

In case there are differences in the translation, the Japanese language version takes precedence.