

MATERIAL SAFETY DATA SHEET

Date July 25, 2006

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Name : UVAN 20SE60

Industrial Resin Department

Thai Mitsui Specialty Chemicals CO.,LTD.

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2. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	Content(%)	CAS No.	EC No.
Amino resin	58-62	-	-
n-Butanol	21-25	71-36-3	200-751-6
Xylene	13-17	1330-20-7	215-535-7
Formaldehyde	1.5-2.5	50-00-0	200-001-8

Classification according to EC regulations:

n-Butanol Xn; R:10-37/38-41-67 S 2-7/9-13-26-37/39-46

Xylene Xn, R:10-20/21-38 S:2-25

Formaldehyde Carc.Cat.3 ; R40 T;R23/24/25 C;R34 R43

*Occupational exposure limits are , if available, listed in Section8.

3. HAZARDS IDENTIFICATION**EMERGENCY OVERVIEW:**

Clear, viscous pale-yellow liquid with solvent odor.

Flammable.

Harmful if swallowed.

Causes eye, skin and respiratory tract irritation.

May cause sensitization by skin contact.

Possible cancer hazard. Contains material that can cause cancer.

POTENTIAL HEALTH EFFECTS

Route(s) of Entry: Eye contact, skin contact, inhalation, ingestion

INHALATION:

May cause respiratory tract irritation. Exposure to high concentrations can cause lowering of consciousness.

INGESTION:

May cause abdominal pain, drowsiness, vomiting.

SKIN CONTACT:

May cause skin irritation. Repeated or prolonged contact may cause allergic skin reaction.

EYE CONTACT:

May cause eye irritation.

CARCINOGENICITY:

NTP : Reasonably anticipated human carcinogen [Formaldehyde]

IARC : 2A (Probable for human) [Formaldehyde]

OSHA : Regulated under 1910.1048 [Formaldehyde]

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE:

No information found.

4. FIRST AID MEASURES**INHALATION:**

Remove the victim to fresh air. If not breathing, give artificial respiration.

If breathing is difficult, give oxygen. Keep the affected person warm and at rest. Get medical attention immediately.

EYE CONTACT:

Immediately and thoroughly flush the eye with large amount of water for at least 15 minutes. Get medical attention. If not removed promptly, this material may cause serious eye damage. Part eyelids with fingers to assure complete flushing. Check for and remove contact lenses if easily possible.

SKIN CONTACT:

Remove contaminated clothing and shoes. Immediately wash skin with plenty of water and soap and get medical attention.

INGESTION:

Do not induce vomiting. Get medical attention immediately. Rinse the mouth with water if possible. Never give anything by mouth to an unconscious or convulsing person.

5. FIRE FIGHTING MEASURES

FIRE AND EXPLOSIVE PROPERTIES: See Section 9

EXTINGUISHING MEDIA: Water fog, dry chemical, foam, CO₂, dry sand

EXTINGUISHING MEDIA WHICH MUST NOT USED: Water jet

GENERAL HAZARD:

Flammable liquid and vapor. Vapors may form an explosive mixture with air. The vapor is heavier than air and can accumulate near the ground.

FIRE FIGHTING INSTRUCTIONS

Keep unnecessary and unprotected personnel away. Shut off supply if possible. Remove containers to safe place if possible. Keep containers and surroundings cool by spraying with water. Fight fire from an upwind position.

FIRE FIGHTING EQUIPMENT

Respiratory and eye protection required for fire-fighting personnel.

Full protective equipment and a self-contained breathing apparatus (SCBA) should be used for all indoor fires and any significant outdoor fires.

HAZARDOUS COMBUSTION PRODUCTS:

Carbon oxides, Nitrogen oxides

6. ACCIDENTAL RELEASE MEASURES**PERSONAL PRECAUTIONS:**

Evacuate immediate area. Warn personnel of fire, explosion and health hazard.

Wear appropriate personal protective equipment as specified in Section 8.

Remove all sources of ignition. Keep upwind, evacuate people downwind.

ENVIRONMENTAL PRECAUTIONS:

Do not let this chemical enter the environment.

CLEAN-UP METHODS:

Use non-sparking tools and equipment. Absorb or cover with dry earth, sand or other non-combustible material and transfer to sealable containers.

Large spills: Dike far ahead of liquid spill for later disposal.

7. HANDLING AND STORAGE**HANDLING****Technical Measure:**

Use only with adequate ventilation. Keep away from heat, sparks, and flame. Use explosion proof electrical equipment. Take precautions against build-up of electrostatic charges. To avoid fire or explosion, dissipate static electricity during transfer by grounding and bonding containers and equipment before transferring material. This material can form explosive mixture with air. Beware of vapor leaks. Avoid contact with eyes, skin and clothing. Wear appropriate personal protective equipment. Provide hand and eye wash station near work area. Wash thoroughly after handling.

Precautions:

Use only under local exhaust or general ventilation.

Safe Handling Advice:

Use explosion-proof (ventilating, lighting and material handling) equipment. Take precautions against build-up of electrostatic charge.

STORAGE:**Storage Conditions:**

Flammable liquid. Protect from direct sunlight. Keep away from heat, flame and all sources of ignition. Store in well-ventilated area. Keep container tightly closed. Store in a segregated and approved area.

Packing Material:

Stainless steel, or plastic such as polyethylene, FRP

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

ENGINEERING CONTROLS:

The use of closed system or local exhaust ventilations is recommended. Provide general ventilation. Provide safety shower and eye wash station near working area.

EXPOSURE LIMITS:

[n-Butanol]		
ACGIH-TLV	20ppm(TWA)	
OSHA-PEL	100ppm(TWA)	
[Xylene]		
ACGIH-TLV	100ppm(TWA)	150ppm(STEL)
OSHA-PEL	100ppm(TWA)	
[Formaldehyde]		
ACGIH-TLV	0.3ppm(TWA) (Ceiling)	
OSHA-PEL	0.75ppm(TWA)	2ppm(STEL)

PERSONAL PROTECTIVE EQUIPMENT

Respiratory Protection:

Supplied-air purifying respirator, breathing apparatus. Vapor respirator.

HAND PROTECTION:

Use chemical protective gloves.

EYE PROTECTION:

Use chemical safety goggles or full-facepiece respirator and face shield

PROTECTIVE CLOTHING:

Wear impervious protective clothing including boots, gloves, apron or coveralls to prevent skin contact.

9. PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE: Clear, Viscous pale-yellow liquid

ODOR: Organic solvent odor

pH: Not available

FLASH POINT: 32°C (Seta closed cup)

AUTOIGNITION TEMPERATURE: Not available

FLAMMABLE LIMITS: Not available

SPECIFIC GRAVITY: Not available

SOLUBILITY: Insoluble in water. Soluble in organic solvent.

The following information is on some components of this product:

[n-Butanol]

BOILING POINT: 117°C

FLAMMABLE LIMITS: 1.4~11.3 vol%

[Xylene (o-)]

FLAMMABLE LIMITS: 0.9~6.7 vol%

10. STABILITY AND REACTIVITY

STABILITY: Stable at room temperature for normal storage and handling.

INCOMPATIBILITIES MATERIALS AND CONDITIONS TO AVOID:

Heat, flame and source of ignition.

HAZARDOUS DECOMPOSITION PRODUCTS:

Carbon oxides in fire

HAZARDOUS POLYMERIZATION: Will not occur

11. TOXICOLOGICAL INFORMATION

No data is available on the product itself..

Toxicological information of some components is known as follows.

[n-BUTANOL]

ACUTE TOXICITY:

Oral	Rat	LD ₅₀	790mg/kg
	Mouse	LD ₅₀	2680mg/kg
Inhalation	Human	TCL0	25ppm

LOCAL EFFECTS:

Eye rabbit	2mg/24H	severe
Skin rabbit	405mg/24H	moderate

[Xylene]

ACUTE TOXICITY:

Oral	Rat	LD ₅₀	4300mg/kg
Inhalation	Rat	LC ₅₀	5000ppm/4H

LOCAL EFFECTS:

Eye rabbit	5mg/24hr	severe
Skin rabbit	500mg/24hr	moderate

[FORMALDEHYDE]

ACUTE TOXICITY:

Oral	Rat	LD ₅₀	100mg/kg
	Mouse	LD ₅₀	42mg/kg
Inhalation	Human	TCL ₀	17mg/m ³ /30min
	Rat	LC ₅₀	203mg/kg
	Mouse	LC ₅₀	454mg/kg

LOCAL EFFECTS:

Eye	Rabbit	750 μ g/24hr	severe
Skin	Rabbit	2mg/24hr	severe

CARCINOGENICITY:

Formaldehyde is classified 2A (probably carcinogenic to human) by IARC and 2A (Suspected human carcinogen) by ACGIH

MUTAGENIC EFFECTS:

Ames test: Positive

Chromosomal aberration: Positive

12. ECOLOGICAL INFORMATION

ECOTOXICITY: Not available.

BIODEGRADABILITY: Not available.

13. DISPOSAL CONSIDERATIONS

WASTE FROM RESIDUES:

Whatever cannot be saved for recovery may be burned in an approved incinerator or disposed in approved waste facility.

Ensure compliance with local, state and federal regulations.

CONTAMINATED PACAGING

Empty the container completely before disposal.

14. TRANSPORT INFORMATION

Regulation	UN Number	Shipping name	Class	P.G.
DOT	UN1866	Resin Solution, flammable	3	III
ADR/RID	UN1866	Resin Solution, flammable	3	C
IMDG	UN1866	Resin Solution, flammable	3	III
IATA-DGR	UN1866	Resin Solution, flammable	3	III

15. REGULATORY INFORMATION

UNITED STATES

OSHA STATUS:

This product is hazardous under the criteria of Federal OSHA Hazard Communication Standard 29 CFR 1910.1200.

TSCA: All components of this product are listed on the TSCA Inventory.

CERCLA REPORTABLE QUANTITY

n-Butanol 5000lbs(2268kg), Xylene 100lbs(45.36kg)

Formaldehyde 100lbs(45.36kg)

CALIFORNIA PROPOSITION 65:

This product contains FORMALDEHYDE, a chemical known to the state of California to cause cancer.

EUROPEAN UNION

EU STATUS:

All component of this product are listed on EINECS or exempt from EINECS registration.

Labeling according to EC Directive:

Hazard symbols: F-Flammable, Xn-Harmful

- R 10 Flammable.
- R 20 Harmful by inhalation.
- R 20/21 Harmful by inhalation and in contact with skin.
- R 20/21/22 Harmful by inhalation in contact with skin and if swallowed.
- R 22 Harmful if swallowed.
- R 23/24/25 Toxic by inhalation, in contact with skin and if swallowed.
- R 36 Irritating to eyes.
- R 36/37 Irritating to eyes and respiratory system.
- R 36/37/38 Irritating to eyes, respiratory system and skin.
- R 36/38 Irritating to eyes and skin.
- R 37 Irritating to respiratory system.
- R 37/38 Irritating to respiratory system and skin.
- R 38 Irritating to skin.
- R 39/23/24/25 Toxic: danger of very serious irreversible effects through inhalation, in contact with skin and if swallowed.
- R 41 Risk of serious damage to eyes.
- R 63 Possible risk of harm to the unborn child.
- R 65 Harmful: may cause lung damage if swallowed.
- R 66 Repeated exposure may cause skin dryness or cracking.
- R 67 Vapors may cause drowsiness and dizziness.

Safety Phrase

- S 1/2 Keep locked up and out of the reach of children.
- S 2 Keep out of the reach of children.
- S 7 Keep container tightly closed.
- S 7/9 Keep container tightly closed and in a well-ventilated place.
- S 13 Keep away from food, drink and animal feedingstuffs.
- S 16 Keep away from sources of ignition -- No smoking.
- S 23 Do not breathe gas/fumes/vapour/spray
- S 25 Avoid contact with eyes.
- S 26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
- S 29 Do not empty into drains.
- S 29/35 Do not empty into drains; dispose of this material and its container in a safe way.
- S 33 Take precautionary measures against static discharges.
- S 36/37 Wear suitable protective clothing and gloves.
- S 45 In case of accident or if you feel unwell, seek medical advice immediately.
- S 46 If swallowed, seek medical advice immediately and show container or label.
- S62 If swallowed, do not induce vomiting; seek medical advice immediately and show this container or label.

16. OTHER INFORMATION

To the best of our knowledge, the information contained herein is accurate.

However, we cannot assume any liability whatsoever for the accuracy or completeness of the

information contained herein.

Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards which exist.