

The Nippon Synthetic Chemical Industry Co., Ltd.**Material Safety Data Sheet**

Preparation /Revision April 15, 2012

1. Identification

Product Name: SHIKOH UV-7620EA

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2. Hazard Identification

GHS Classification

Physical and Chemical Hazards:	Flammable Liquid	Category 2
Human Health Hazards:	Serious Eye Damage/ Eye Irritation	Category 2
	Skin Sensitization	Category 1
	Specific Target Organs/ Systemic Toxicity (Single Exposure)	Category 1
	Specific Target Organs/ Systemic Toxicity (Single Exposure) (narcotic effects)	Category 3

Environmental Hazards: — —

Hazards not listed in the above are classified as "Not Applicable" or "Classification Not Possible".

Classification is based on data classified by the Japanese GHS Inter-ministerial Committee in 2006 and information from material suppliers in accordance with the Industrial Safety and Health Law.

GHS Label Elements

Hazard symbols:

**Signal words:****Danger**

Hazard Statements:

Highly flammable liquid and vapor
 Causes serious eye irritation
 Causes damage to organs (respiratory system)
 May cause drowsiness or dizziness

Precautionary statements:

[Prevention]

Keep container tightly closed.
 Keep away from heat/ sparks/ open flames/ hot surfaces. –No smoking.
 Wear protective gloves/ protective clothing/ eye protection/ face protection.
 (Manufacturer/ supplier or the competent authority to specify type of equipment.)
 Ground/ bond container. (if electrostatically sensitive material is for reloading.) (if product is volatile so as to generate hazardous atmosphere.)
 Take precautionary measures against static discharge.
 Use only non-sparking tools.
 Wash hands thoroughly after handling.
 Do not breathe dusts or mists. (if inhalable particles of dusts or mists may occur during use.)

Contaminated work clothing should not be allowed out of the workplace.
Obtain special instructions before use.
Do not handle until all safety precautions have been read and understood.
Do not eat, drink or smoke when using this product.
Avoid release to the environment, if this is not the intended use.

[Response]

In case of small fire: Use carbon dioxide, dry chemical powder, water spray, and alcohol-proof foam for extinction.

In case of large fire: Use water spray, mist water, and alcohol-proof foam for extinction..
(Manufacturer/ supplier or the competent authority to specify appropriate media.)

IF ON SKIN (or hair): Remove/ Take off immediately all contaminated clothing. Rinse skin with running water/ shower.

Wash contaminated clothing before reuse.

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

IF SWALLOWED: Rinse mouth. Do not induce vomiting.

IF INHALED: Remove a victim to fresh air and keep at rest in a position comfortable for breathing. Call a physician immediately.

IF exposed or concerned: Get medical advice/ attention.

If exposed: Call a physician.

If you feel unwell: Get medical advice / attention.

[Storage]

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

Store locked up.

[Disposal]

Dispose of contents/ container (in accordance with international/ local/ regional/ local regulations).

Important Symptoms/ Effects:

Major Symptoms/ Effects:

(Ethyl acetate) Causes headache, dizziness, nausea, and unconsciousness

3. Composition / Information on Ingredients

Substance / Mixture: Mixture
Chemical Name or Common Name: Mixture of 1)Urethane acrylate, 2) Acrylic ester 3)Ethyl acetate
4) Toluene (impurity of low material)
Chemical Properties (Chemical Formula, etc.):
CAS No.: 1) (Resin) Non-disclosure
2) (Acrylic ester) Non-disclosure
3) (Ethyl acetate) 141-78-6
4)(Toluene) 108-88-3
Concentration or Concentration Ranges (Contents) :
1) (Resin) 40-50%, 2) (Acrylic ester) 15-25%
3)(Ethyl acetate) 30-40% 4) (Toluene) 0.1~less than 0.3%
Reference number in gazette list in Japan:
1) (Resin) Non-disclosure
2)(Acrylic resin) Non-disclosure
3) (Ethyl acetate) 2-726

4. First-aid measures

IF INHALED: Remove a victim to fresh air and keep at rest in a position comfortable for breathing.
Call a physician immediately.
Get medical advice / attention.
IF ON SKIN: Remove/ Take off immediately all contaminated clothing.
Call a physician immediately.
Wash skin immediately.
Wash skin with plenty of water and soap.

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

If you feel unwell: Get medical advice / attention.

Wash contaminated clothing before reuse.

IF IN EYES: Call a physician immediately. Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

Get medical advice / attention.

IF SWALLOWED: Call a physician immediately. Rinse mouth. Do not induce vomiting.

Get medical advice/ attention.

Personal Protective Equipment for First-aid Responders:

Exercise caution for fire. Wear respiratory protection.

Special Notes to Physicians: It is necessary to rest the victim in bed and observe the course medically.

5. Fire-fighting Measures

Suitable extinguishing media: Small fire: Carbon dioxide, dry chemical powder, water spray, and alcohol-proof foam
Large fire: Water spray, mist water, and alcohol-proof foam

Prohibited extinguishing media: Water bar

Unusual Fire and Explosion Hazards: Extremely flammable. This product is ignited easily by heat, sparks, and flames. Container may explode by heating.

Irritant, toxic, or corrosive gasses may be emitted by fire.

Very flammable liquids and vapours.

Specific extinguishing methods: Eliminate all ignition sources and fight fire from upwind side using extinguishing media. <In case of fire fighting for surrounding areas> Move containers to a safe place immediately. For irremovable containers, cool containers and the surroundings with water spray. If the containers are covered with flame: Do not approach to the container due to explosion risk.

<In case of ignition> For a fire that has just started, fight fire using plenty of water, dry chemical powder, carbon dioxide, and dry sand for extinction.

For a large-scale fire, it is effective to shut off air by using foam fire-extinguisher. If explosion may occur: Evacuate the inhabitants in the neighborhood from the fire site.

Protective action for Fire-fighter: During fire-fighting, wear appropriate protective equipments (gloves, glasses, and mask).

6. Accidental release measures

Personal Precaution/ Protective Equipment:

Guide people away from downwind of the leakage. Keep people away from around the leakage site by encircling it with a rope. During working, wear protective equipment surely. Do not work in the downwind area. Keep away from the lower places. Ventilate the closed place before entry.

Environmental Precautions: Exercise caution so as not to drain the dense waste liquid into rivers, etc. Prevent drainage into waterways, sewers, basement rooms or closed place.

Methods and Materials for Containment and Cleaning Up:

(Ethyl acetate) Collect the leaked liquids and spoiled liquids in a closable container as much as possible. Allow sand or inactive absorbent to absorb the remaining liquid and move them to a safe place. Do not drain the waste into the sewage. (Special personal protective equipment: Complete protective clothing with self-contained breathing equipment.). [Card 4]

Prevention Measures for Secondary Disaster:

Eliminate all ignition sources around the leak site immediately and prepare for extinguishing media.

7. Handling and storage

Handling:

- Since this product has strong odour even at a low concentration, handle it in the closed facility or install local ventilation equipment.
- Prevent emitting vapor as much as possible and make efforts to maintain the working environment under the control concentration.
- Prevent leakage, overflow, and scattering, and do not emit vapors.

Technical Measures:

- Keep fire away. Ventilate the working place well.
- Wear appropriate protective equipment so as to prevent inhalation, or contact with

eyes, skin, or clothing, and work from upwind side.

- If working clothing is contaminated, wash the contaminated clothing thoroughly.
- Recommend to wash hands, face, and mouth, after working.

Local Exhaust Ventilation and Entire Exhaust Ventilation:

- Close container tightly or install local ventilation equipment.

Precaution:

- Prevent emitting vapor as much as possible and make efforts to maintain the working environment under the control concentration.
- Never handle the container roughly, such as tumbling, dropping, impacting, or dragging.
- Specify the place where used empty containers are stored and collect them.

Advice on Safe Handling:

Do not handle until all safety precautions have been read and understood.

- Prevent leakage, overflow, and scattering, and do not emit vapors.
- Keep away from direct sunlight, hot surfaces, sparks, and flames, and avoid contact with strong oxidants.

Storage

Prevent leakage and scattering. Exercise caution for theft.

Technical measures:

In a storage place, walls, posts, and floors should have fire-proof structure and be covered with non-flammable materials.

In a storage place, the roof should be made of non-flammable materials and covered with metal plates or other light non-flammable materials, and the ceiling should not be installed.

In a storage place, the floors should have a water-proof or water-impermeable structure.

In a storage place, the floors should have an impermeable structure against hazardous substances, and an appropriate ditch to reserve them should be installed.

In a storage place, natural lighting, lighting, and ventilating should be installed in order to store and handle the hazardous substances.

Proper storage conditions:

No fire. Avoid direct sunlight and heat sources.

Exercise caution for theft.

(Ethyl acetate) Fire-proof facility. Keep away from strong oxidants. Keep cool.

Keep container tightly closed. [Card 4]

Safe materials for packages and container:

Well-closed container

8. Exposure controls and personal protection

Technical facility measures:

Install enclosed facilities and equipments or local ventilation equipment, if possible.

(Ethyl acetate) Explosion-proof electronics and lighting facilities. Local ventilation equipment or respiratory protection. [Card 4]

Control Concentration:

(Ethyl acetate) 200ppm (Toluene) 20ppm

Exposure limit value

Japan Association on Industrial Health:

(2005):(Ethyl acetate) 200ppm or 720 mg/m³

(2008):(Toluene) 50ppm or 188 mg/m³

ACGIH:

(2005):(Ethyl acetate) 400ppm (TWA)

(2009):(Toluene) 20ppm (TWA)

Protective Equipment

Respiratory protection:

Poison-proof masks (for organic hazard gases)

Hand protection:

Wear appropriate protective gloves if risk of skin contact.

Eye protection:

Wear appropriate eye protection.

Wear goggles against chemical scattering and appropriate face protection.

Wear eye protection. If there is a possibility of contacts with eyes and face by scattering and mist, wear wide-type chemical splash goggles and face shield.

Skin and body protection:

Wear appropriate face protection.

In order to prevent any contacts, wear impermeable protective equipment such as neoprene gloves, apron, boots, or suits, as required.

If there is a possibility of splash, full-face drug-resistance protective clothing (for example, acid-proof suits) and boots are required.

Proper sanitary measures

Wash hands thoroughly after handling.

Do not eat, drink or smoke when using this product.

 Contaminated work clothing should not be allowed out of the workplace.

9. Physical and chemical properties

Appearance (Physical state, form, and color):	Physical state: solution Color: colorless and transparent
Odor (Odor threshold):	Aromatic odor
pH:	No information
Melting point/ Freezing point:	(Ethyl acetate) -84°C [Card 4]
Boiling point, initial boiling point, and boiling range:	Boiling point: (Ethyl acetate) 77°C [Card 4]
Flash point:	(Ethyl acetate) -4°C (cc) [Card 4]
Auto-ignition temperature (Ignition point):	(Ethyl acetate) 427°C [Card 4]
Upper/ lower flammability or explosive limits	(Ethyl acetate) Upper limit: 11.5 vol% (in the air) [Card 4] Lower limit: 2.2 vol% (in the air) [Card 4]
Vapor pressure:	(Ethyl acetate) 10 kPa (20°C) [Card 4]
Vapor density:	Relative vapour density (air = 1) (Ethyl acetate) 3.0 [Card 4]
Specific gravity (Relative density):	1.0~1.3g/cm ³
Solubility:	Solvent solubility: (Ethyl acetate) Water; 8.5 ml/100 ml (15°C) [A Handbook on Industrial Poisoning]
n-Octanol/ water partition coefficient:	(Ethyl acetate) 0.73 [Card 4]
Decomposition temperature:	No information

10. Stability and reactivity

Chemical stability:	(Ethyl acetate) It may be ignited and explodes violently when heated. It is decomposed in the presence of UV, bases, or acids.
Possibility of hazardous reactions:	(Ethyl acetate) It reacts with strong oxidants and results in the risks of fire and explosion.
Conditions to avoid:	(Ethyl acetate) Avoid contacts with UV, high temperature, strong oxidants, and strong bases.
Incompatible materials:	(Ethyl acetate) Strong oxidants and strong bases.
Hazardous decomposition products:	(Ethyl acetate) Carbon monoxide and carbon dioxide are emitted by ignition. decomposition.

11. Toxicological information

Acute toxicity:	(Ethyl acetate) Inhalation: Rat LC50 16000 ppm/6h(57.6mg/L) Oral: Mouse LD50 4100 mg/kg Rat LD50 5600 mg/kg Rabbit LD50 4935 mg/kg Guinea pig LD50 5500 mg/kg Subcutaneous: Cat LD50 3000 mg/kg Guinea pig LD50 3000 mg/kg [RTECS]
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Serious eye damage/ eye irritation: (Acrylic ester) We include category 1 and a done thing than severe irritation, causticity, corneal opacity or a severe irritating report (NTP GMM. No. 4 (2005)) in the study using the rabbit.
 (Ethyl acetate) Eye irritation was observed in rabbits, but it was recovered within 7 days. [5]
 Causes eye irritation (Category 2B)

Respiratory sensitization /Skin sensitization We put maximization test using the marmot, multiple studies of Draize test and show sensitizing potential, and we are positive, and the positive result of the patch test is reported in the thing with several reports indicating the positive, the case with suspected study and acrylic allergy by the volunteer by the patch test of a worker treating the material concerned in the sensitizing potential study by the human volunteer a lot, and even a skin sensitization test (maximization test) using the marmot includes results several reported things of positive rate more than 50%.
 In addition, EU classification corresponds to R43 (May cause sensitization by skin contact) (category 1).

Specific target organs/systemic toxicity - Single exposure:

(Ethyl acetate) Upper respiratory irritation is reported in humans by the exposure at 400 ppm. [1], [2] Narcotic effects and liver damages are reported by the exposure near the lethal concentration. [2]
 Causes damage to organs (respiratory system) (Category 1)
 May cause drowsiness or dizziness (Category 3)

12. Ecological information

Bioaccumulation Good degradability (of Ethyl acetate [Published Official Information 05], Hazardous to the aquatic enviroment (Acute hazard)
 (Ethyl acetate) Crustacea (water flea) EC50 164mg/L/48H
 (Toluene) Brown shrimp EC50 3.5mg/L/96H aqueous environmental chronicity is noxious.
 Hazardous to the aquatic enviroment (Long-term hazard)
 (Ethyl acetate) Acute not difficulty solution (80,000 mg/L of aqueous solubilities); is less toxic.
 (Toluene) It is estimated that organism accumulation characteristics are low (log Kow=2.73).

13. Disposal consideration

Waste from residues: For disposal, comply with the related laws and regulations and the local regulations. Consign disposal of the remaining contents to the disposal-specialized services approved by a prefectural governor or local disposal services.
 When disposal of the remaining contents is consigned to disposal-specialized services, inform the services of the risks and hazards sufficiently prior to do so.
 Contaminated container and package: Recycle the container after cleaning, or dispose of it in accordance with the related laws and regulations and the local regulations.
 Remove the contents completely before disposal of the empty containers.

14. Transport information

U.N. Classification: Class 3 (Flammable Liquid)
 U.N. Number: UN 1866
 Packing group II
 Marine pollutant Not applicable.
 Domestic Regulation Land transportation information Comply with the Fire Defense Law
 Marine transportation information Comply with the Ship Safety Law.
 Aviation transportation information Comply with the Aviation Law.

Specific transportation safety measures and conditions:

No fire. Avoid direct sunlight. Do not load with explosives and oxidizers.
 Ground/bond container and receiving equipment. Prior to transport, load the material by enforcing the prevention measure against load collapse, so as not to cause inversion, fall,

and damage, and comply with the laws and the regulations.

Emergency measure indicator number	128
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15. Regulatory information

Regulatory information: Follow all relevant regulations in your country

16. Other information

Notes:

- This information contained herein may be revised based on new findings and test results.
- The information contained herein is prepared based on the available data and information at present, but no guarantee of accuracy in the information and safety is made.
- All information contained herein is intended for normal handling. Therefore, in case of special handling, users are requested to newly practice appropriate safety measures for application and usage before handling.
- All chemical products may have unknown hazards, therefore, meticulous cautions are required for handling. Users are requested to set the safe use conditions on their own responsibility.