

SAFETY DATA SHEET

Section 1: Product and company identification

1.1 Product and company identification	U-Varnish S
1.2 Relevant identified uses of the substance or mixture and uses advised against	Paint, varnish and/or manufacture of plastics products.
1.3 Details of the supplier of the safety data sheet	UBE INDUSTRIES, LTD. Specialty chemical & Products Company Polyimide Business Unit Seavans North Bldg, 1-2-1 Shibaura Minato-Ku Tokyo 105-8449, Japan; Tel:+81-3-5419-6180 ; FAX : +81-3-5419-6258 E-mail: ube-pigr@ube-ind.co.jp
1.4 Emergency telephone number	CHEMTREC United States : 800-424-9300 24 hours everyday International : +1-703-527-3887 (Collect) 24 hours everyday Nontransportation Ube America, Inc TEL : 212-551-4700 (9 am - 6 pm EST M-F)

Section 2: Hazards identification

2.1 Classification of the substance or mixture

GHS Classification	Skin corrosion/irritation: Category 2 Serious eye damage/eye irritation: Category 2 Reproductive toxicity: Category 1B Specific target organ toxicity (single exposure): Category 3 (Respiratory Tract Irritation)
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2.2 Label elements



Signal word	Danger
Hazard statements	H360: May damage fertility or the unborn child. H335: May cause respiratory irritation. H315: Causes skin irritation. H319: Causes serious eye irritation
Precautionary statements	
prevention	P280: Wear protective gloves/protective clothing/eye protection/face protection.
response	P337+P313: If eye irritation persists: Get medical advice/attention. P304+P340: IF INHALED: Remove victim to fresh air and keep at

	rest in a position comfortable for breathing. P308+P313: IF exposed or concerned: Get medical advice/attention. P332+P313: If skin irritation occurs: Get medical advice/attention.
storage	P403+P233: Store in a well-ventilated place. Keep container tightly closed
disposal	None
Supplemental information	None
2.3 Other hazards	None known
2.4 The main symptoms and emergency summary after exposure	Not found

Section 3: Composition/information on ingredients

3.1 Mixture

<i>Declarable components</i>	<i>Conc. (wt%)</i>	<i>CAS No.</i>	<i>OSHA status (29 CFR 1910. 1200)</i>
Polyamic acid	abt.20%	29319-22-0	Not hazardous
N-Methyl-2-pyrrolidone	abt.80%	872-50-4	Not hazardous

Section 4: First aid measures

4.1 Description of first aid measures

Inhalation	In case of inhalation of exhaust fumes and solvent , remove to fresh air. Give artificial respiration if needed. Call a physician.
Skin	Wash the affected area thoroughly with soap and water. Remove contaminated clothing. In case of the high temperature thing, cool it with water. If swell, itch, or scald remains, contact a physician.
Eye	In case of contact with eyes, rinse immediately with plenty of water at least for 15 minutes, occasionally lifting eyelids. Remove any contact lenses if easy to do. Seek immediate medical attention.
Ingestion	If swallowed, wash out mouth thoroughly and give water to drink. Call a physician immediately. Do not induce vomiting, unless instructed by medical personnel.

4.2 Most important symptoms and effects, both acute and delayed Irreversible dermatitis will occur if you do not wash affected skin immediately and thoroughly. Irreversible eye damage will occur if you do not rinse affected eyes immediately and thoroughly.

4.3 Indication of any immediate medical attention and special treatment needed Not available.

Section 5: Firefighting measures

5.1 Extinguishing media

Suitable	Water fog, carbon dioxide and foam
Unsuitable	Direct water stream
5.2 Special hazards arising from the substance or mixture	CO, CO ₂ and NO ₂ occur at high temperature
5.3 Advice for firefighters	Remove containers from fire or cool them with water spray. Firefighters should wear an approved self-contained breathing apparatus and full protective clothing.
5.4 Special protective device to protect the fire fighters.	Wear full fire-fighting turn-out gear (full bunker gear) and Respiratory protection (self-contained breathing apparatus).

Section 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures	In case of spill or leak, the nearby ignition sources must be removed rapidly. Do not inhale vapors/aerosols.
6.2 Environmental precautions	Product does not flow out in a river, sea, soil, etc. Prevent the material from leaking out by sand or sandbags enclosure.
6.3 Methods and material for containment and cleaning up	Do not use combustible materials, such as sawdust. Gather up and place into waste container.
6.4 Reference to other sections	For recommended personal protective equipment, see Section 8. For disposal considerations, see Section 13.
6.5 Precautions measures to prevent secondary hazards	Remove combustible materials and ensure adequate ventilation.

Section 7: Handling and storage

7.1 Precautions for safe handling	Avoid contact with eyes, skin, and clothing. Avoid breathing vapor or mist. Wash thoroughly after handling. When dealing with it under high temperature, it is cautious of ventilation, and suitable respiratory protective equipment is worn so that exhaust gas may not be inhaled.
7.2 Conditions for safe storage, including any incompatibilities	Keep containers tightly closed in a cool, dry and well-ventilated place away from direct sunlight. Containers should be protected against falling down.
7.3 Specific end use(s)	Not available

Section 8: Exposure controls/personal protection

8.1 Control parameters

Limit values	ACGIH (2013) Not available
Other: human health (DNELs, DMELs)	Not available
Other: environmental	Not available

(PNEC)

8.2 Exposure controls

Engineering controls	Local exhaust ventilation or use in a closed system is recommended. Ventilation systems and extraction facilities should be flame-proof.
Personal protective equipment	<p><u>Eye/face protection</u>: Tightly fitting safety goggles.</p> <p><u>Skin protection</u>:</p> <p><u>Hand protection</u>: Handle with chemical resistant gloves. Gloves must be inspected prior to use.</p> <p><u>Other</u>: Wear chemical resistant impervious clothing.</p> <p><u>Respiratory protection</u>: Wear chemical cartridge respirator with a full facepiece</p>
Environmental exposure controls	Not available

Section 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance	Yellow or brown liquid
Odour	Amine-like odour
pH	No information available
Initial boiling point/range	No information available
Flash point	85°C
Evaporation rate	No information available
Flammability (solid, gas)	No information available
Flamm. or expl. limits	No information available
Vapour pressure	No information available
Vapour density	No information available
Relative density	No information available
Solubilities	Water solubility: Insoluble
Partition coeff. (K_{ow})	No information available
Viscosity	No information available

9.2 Other information No information available

Section 10: Stability and reactivity

10.1 Chemical stability	Stable under ordinary conditions of use and storage..
10.2 Possibility of hazardous reactions	Decomposed at high temperature and release CO, CO ₂ and NOx. N-Methyl-2-pyrrolidone reacts with strong oxidizer and base.
10.3 Conditions to avoid	High temperature condition. Ignition sources
10.4 Incompatible materials	No information available
10.5 Hazardous decomposition products	CO, CO ₂ and NOx occurs by combustion.

Section 11: Toxicological information

11.1 Information on toxicological effects

N-Methyl-2-pyrrolidone	
Acute toxicity	LD50 (oral-rat) = 4150 mg/kg LC50 (inhalation-rat) > 5.1 mg/l LD50 (skin-rabbit) >5000 mg/kg
Skin corrosion/irritation	Classified according to Regulation (EU) 1272/2008, Annex VI (Table 3.1/3.2)
Serious eye damage/irritation	Classified according to Regulation (EU) 1272/2008, Annex VI (Table 3.1/3.2)
Respiratory or skin sensitisation	Not skin sensitizer (Guinea pig)
Germ cell mutagenicity	Ames test: Negative Chromosome aberration test: Negative
Carcinogenicity	Not carcinogenic (2 year inhalation-rat)
Reproductive toxicity	Classified according to Regulation (EU) 1272/2008, Annex VI (Table 3.1/3.2)
STOT-single exposure	Respiratory irritating (Inhalation-rat, mouse)
STOT-repeated exposure	Oral-rat 28- and 90-days: NOAEL 169 mg/kg/day Dermal-rabbit 20-days: NOAEL 826 mg/kg/day Inhalation-rat 13-weeks: NOAEC 500 mg/m ³
Aspiration hazard	No information available

Section 12: Ecological information

12.1 Toxicity

N-Methyl-2-pyrrolidone	96h-LC50 (Oncorhynchus mykiss) : >500 mg/L 24h-EC50 (Daphnia magna) : >1000 mg/L 72h-EC50 (Scenedesmus subspica) = 600.2 mg/L
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12.2 Persistence and degradability

Readily biodegradable
BOD/ThOD: 73%(28days)

12.3 Bioaccumulative potential

Not likely because of hydrolysis.

12.4 Mobility in soil

No information available

12.5 Other adverse effects

No information available

Section 13: Disposal considerations

13.1 Waste treatment methods

Disposal must be in accordance with applicable regional, national and local laws and regulations. Local regulations may be more stringent than regional or national requirements. Packaging may contain residues of the product and should be treated accordingly. Do not dump this material into sewers, on the ground, or into any body of water.

Section 14: Transport information

14.1 UN Number	No classification assigned
14.2 UN proper shipping name	None.
14.3 Transport hazard class(es)	None.
14.4 Packing group	None.
14.5 Environmental hazards	Not classified as environmentally hazardous.
14.6 Special precautions for user	Not available

Section 15: Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture	OSHA status: All components are not hazardous. TSCA status: Polyamic acid is listed on the inventory. N-Methyl-2-pyrrolidone is listed on the inventory. California Proposition 65: N-Methyl-2-pyrrolidone is listed. (Type of toxicity : developmental) Canada DSL/NDSL inventory: Polyamic acid is listed on the NDSL inventory. N-Methyl-2-pyrrolidone is listed on the DSL inventory. Please refer to any other regulations in U.S or Canada.
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Section 16: Other information

Revisions	First issue: 17/May/2010 Revisions: 21/Nov/2014 Revise Section 1-2,4-5,7-16
Training advice	Not available

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