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SAFETY DATA SHEET

For information or emergency:

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1. IDENTIFICATION OF THE PRODUCT AND THE COMPANY

TRADE NAME: **Norland Optical Adhesive 76**

TRADE CODE: **NOA 76**

PRODUCT USE: Ultraviolet and Visible Light Curing Adhesive

MANUFACTURER: Norland Products Inc
1095 Cranbury South River Road, Suite 20

Jamesburg, NJ 08831 USA

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2. HAZARDS IDENTIFICATION

2.1 Classification of the Substance or Mixture GHS-US Classification

Acute oral toxicity : Cat.4

Skin Sensitization : Cat.1A

Eye Damage/irritation : Cat.2A

Acute Aquatic toxicity : Cat 1

Pictogram



Signal Word:Warning

2.2. Label Elements GHS-US Labeling

Hazard Statements (GHS-US)

H302 Harmful if swallowed.

H317 May cause an allergic skin reaction.

H319 Causes serious eye irritation.

H410 Very toxic to aquatic life with long lasting effects

H411 Toxic to aquatic life with long lasting effects

Precautionary Statements:

P313: If skin irritation occurs: Get medical advice/attention.

P305 + P351 + P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Seek medical attention.

P280: Wear protective gloves/protective clothing/eye protection/face protection.

P501 Dispose of contents/container in accordance with local, regional, national and international regulations.

P403+P233+P235 - Store in a well-ventilated place. Keep container tightly closed. Keep cool.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical nature: Urethane related resin based formulation.

Composition :	Cas#	Content	GHS-US Classification - For all.
Aliphatic urethane Acrylate	Trade Secret	60-80%	H302 Cat.4 Acute Oral Toxicity H317 Cat.3 Sensitization, Skin. H319 Cat.2A Eye Damage/Irritation H335 Cat.3 Respiratory Tract Irritation H410 Cat.1 Acute Aquatic Toxicity H411 Cat.2 Aquatic Toxicity
Tetrahydrofurfuryl Methacrylate	2455-24-5	8-20%	
Hexmethylene diacrylate	13048-33-4	10-25%	

4. FIRST AID MEASURES

- In case of inhalation: If tightness in the chest, irritation or coughing occurs, remove to fresh air. Get medical attention if symptoms persist.
- In case of splashes in eye: If the material gets in the eyes, immediately wash the eyes with copious amounts of water, occasionally lifting the lower and upper eyelids. Continue for 15 minutes and get medical attention immediately.
- In case of skin contact: If the material gets on the skin, immediately wash the area with soap and water and flush with water. If irritation develops, get medical attention.
- In case of clothing spattering: Discard or wash contaminated clothing before reuse.
- In case of ingestion: If the material has been swallowed, dilute with milk or water if the victim is alert. See doctor as soon as possible.

First Aiders should wear gloves/protective clothing, eye/face protection if there is a potential for exposure to liquid product.

5. FIRE-FIGHTING MEASURES

- Extinguishing Media recommended: Carbon Dioxide, foam, dry chemical.
- Extinguishing Media inadvisable: Water. Jets of water from fire hose.
- Special Hazards: None.
- Hazardous decomposition/combustion products: Could generate carbon monoxide, carbon dioxide, sulfur dioxide or hydrogen sulfide.
- Special protective equipment: A self-contained breathing apparatus.

6. ACCIDENTAL RELEASE MEASURES

Measures for personal safety:

GLOVES: Use gloves made from an impervious material, e.g. nitrile, butyl or latex rubber. Latex rubber may soften and become pervious if also exposed to organic solvents.

RESPIRATOR: Not required under normal operating conditions. Respiratory protection may be needed in unusual circumstances where significant exposure to fumes or mists can occur. A NIOSH approved air purifying respirator with an organic vapor cartridge would then be recommended. Use must comply with OSHA (29 CFR 1910.134) and other regulatory standards.

EYE: Wear safety glasses.

FOOTWEAR: Impervious shoes, e.g. leather, not cloth or sandals.

Ventilation Requirements:

A fume hood is not generally required. The room should have adequate ventilation to avoid potential for concentration of mist or vapors.

Environmental measures:

Stop the product from entering the drainage system and the natural environment.

Limit leakage with earth.

Cleaning methods:

Recovery: Absorb material with paper towel or other absorbent. Place in container for disposal. If possible, expose absorbed resin to UV light or sunlight to solidify the resin.

Cleaning/decontamination: Clean up with soap and water.

Elimination: Eliminate according to local and national regulations.

7. HANDLING AND STORAGE

Handling:

Technical measures: Do not reuse container. This product is for industrial use only. Practice good housekeeping and vigorous personal hygiene to minimize contact with material.

Precautions to take: Avoid contact with skin and eyes.

Storage: Store at 5°C to 25°C. Keep away from sunlight.

8: EXPOSURE CONTROL/PERSONAL PROTECTION

Precautionary Measure: None.

Exposure limits: None.

Protective personal equipment:

Respiratory protection: Not needed with normal use.

Protection for hands: Use gloves made from an impervious material, e.g. nitrile, butyl or latex rubber. Latex rubber may soften and become pervious if also exposed to organic solvents.

Eye Protection: Wear safety glasses.

Protection from skin: Wear clothing that provides protection to skin.

9: PHYSICAL AND CHEMICAL PROPERTIES

Appearance:
Color: Clear liquid
Odor: Slight sulfur odor
pH: No data available
Melting point: No data available
Boiling point: No data available
Decomposition temperature: >300°C
Flash point: 175°C
Auto ignition temperature: No data available
Explosive properties: None
Oxidizing properties: None
Vapor pressure: <0.1 @ 20°C
Density: >1
Solubility/Miscibility:
 Solubility in water Not miscible
Viscosity: 4500 cps @ 25°C

10: STABILITY AND REACTIVITY

Conditions to avoid: Keep away from UV and sunlight. Temperatures above 65°C may cause exothermic nonhazardous polymerization.
Substances to avoid: None
Hazardous decomposition products: None

11: TOXICOLOGICAL INFORMATION

Acute toxicity:
 Ingestion: LD50 Oral (Rat): 1,000-2000 mg/kg.
 Method: OECD Test Guidelines 423
 Inhalation: LC50 (Rat): >3.6v mg/l
 Method: OECD Test Guidelines 403
Local effects:
 On skin: slight irritating to skin.
 On eyes: irritating to eyes.
Long term toxicity:
 Skin contact: May cause sensitization by skin contact.
Reproductive Toxicity No Data Available

12: ECOLOGICAL INFORMATION

Toxicity to fish: LC50 (oncorhynchus mykiss(rainbow trout)):0.42 mg/l
 Method: OECD Test Guidelines 203
Toxicity to daphnia & other EC50 (Daphnia magna (water flea)) 0.35mg/l
Toxicity to algae: (Pseudokirchneriella subcapitata (algae)):
 Method: OECD Test Guideline 201
Mobility: Cured adhesives are immobile.
General ecological: Do not empty liquid into drains or ground water.
Persistence and degradability: No data available
Bioaccumulative potential: No data available
Other adverse effects: No data available

13: DISPOSAL CONSIDERATION

Disposal Methods for product and waste:

Send to authorized disposal plants or for incineration under controlled conditions.

Disposal methods for contaminated packaging:

Do not reuse package. Send to authorized disposal plants or for incineration under controlled conditions.

You should comply with the local and national regulations in force when disposing.

14: TRANSPORTATION INFORMATION

International Regulations:

IATA-DGR UN/ID No. : UN 3082 Environmentally Hazardous Substance: liquid, Class: 9
Packing group: III, low danger(Z) Packing instruction (cargo aircraft):964
Packing instruction (passenger aircraft):964

IMDG-Code UN number : UN 3082 Environmentally Hazardous Substance: liquid Packing group: III, low danger(Z)

15: REGULATORY INFORMATION

Contains:

Urethane related adhesives.

US Federal Regulations

Unless otherwise noted, this product is in compliance with the inventory Listing of the countries shown below.

Europe (EINECS/ELINCS)	Listed/registered
USA (TSCA)	Listed/registered
Canada (DSL)	Listed/registered
Australia (AICS)	Listed/registered
Japan (MITI)	Listed/registered
Korea (TCCL)	Listed/registered
Philippines (PICCS)	Listed/registered
China	Listed/registered

16: OTHER INFORMATION

Custom Situation: Harmonized System (HTS/Schedule B) 35.06.91.0000

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