



Nurofast 52 Hardener

SECTION 1. IDENTIFICATION

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| Product Identifier | Nurofast 52 Hardener |
| Other Means of Identification | Urethane Hardener |
| Product Family | Aromatic isocyanate |
| Recommended Use | Mixed with another component to form a corrosion-resistant membrane. |
| Restrictions on Use | None known. |
| Manufacturer/Supplier Identifier | The Stebbins Engineering and Manufacturing Company, 363 Eastern Boulevard, Watertown, NY, 13601, (315) 782-3000, www.stebbinseng.com |
| Emergency Phone No. | Chemtrec - Within North America, 1-800-424-9300, 24 hours Stebbins 24 Hour Contact-, 1-315-788-6624 |
| SDS No. | 009 |

SECTION 2. HAZARD IDENTIFICATION

Classification

Respiratory sensitization - Category 1A; Skin sensitization - Category 1B

Label Elements



Signal Word:
Danger

Hazard Statement(s):

- H317 May cause an allergic skin reaction.
- H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.

Precautionary Statement(s):

- P261 Avoid breathing vapours.
- P272 Contaminated work clothing must not be allowed out of the workplace.
- P280 Wear protective gloves.
- P284 Wear respiratory protection (NIOSH approved air-purifying respirator with an organic vapour cartridge).
- P302 + P352 IF ON SKIN: Wash with plenty of water.
- P304 + P341 IF INHALED: If breathing is difficult, remove person to fresh air and keep comfortable for breathing.
- P333 + P313 If skin irritation or rash occurs: Get medical advice/attention.
- P342 + P311 If experiencing respiratory symptoms: Call a POISON CENTRE or doctor.
- P363 Wash contaminated clothing before reuse.
- P501 Dispose of contents and container in accordance with local, regional, national and international regulations.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

| Chemical Name | CAS No. | % | Other Identifiers | Other Names |
|--|------------|-------|-------------------|-------------|
| Methylenediphenyl diisocyanate (mixed isomers) | 26447-40-5 | 40-50 | | |
| 4,4'-Methylenediphenyl diisocyanate | 101-68-8 | 30-40 | | |
| Polymethylene polyphenyl isocyanate | 9016-87-9 | 15-25 | | |

SECTION 4. FIRST-AID MEASURES

First-aid Measures

Inhalation

Move to fresh air. Keep at rest in a position comfortable for breathing. If breathing is difficult, trained personnel should administer emergency oxygen if advised to do so by Poison Centre or doctor. If experiencing respiratory symptoms (e.g. coughing, shortness of breath, wheezing), call a Poison Centre or doctor.

Skin Contact

Avoid direct contact. Wear chemical protective clothing if necessary. Wash gently and thoroughly with lukewarm, gently flowing water and mild soap for 5 minutes. Take off immediately contaminated clothing, shoes and leather goods (e.g. watchbands, belts). If skin irritation occurs, get medical advice or attention.

Eye Contact

Immediately rinse the contaminated eye(s) with lukewarm, gently flowing water for 15-20 minutes, while holding the eyelid(s) open. If eye irritation persists, get medical advice or attention.

Ingestion

Rinse mouth with water. Get medical advice or attention if you feel unwell or are concerned. Never give anything by mouth if person is rapidly losing consciousness, or is unconscious or convulsing. Do not induce vomiting.

Most Important Symptoms and Effects, Acute and Delayed

Can irritate the nose and throat. Skin sensitizer. May cause an allergic skin reaction in some people. Respiratory sensitizer. May cause asthma or an asthma-like reaction in some people. Repeated or prolonged exposure can irritate the skin.

Immediate Medical Attention and Special Treatment

Target Organs

Respiratory system, eyes, skin.

Medical Conditions Aggravated by Exposure

Asthma, respiratory conditions, skin allergies.

SECTION 5. FIRE-FIGHTING MEASURES

Extinguishing Media

Suitable Extinguishing Media

Use water to keep non-leaking, fire-exposed containers cool.

Unsuitable Extinguishing Media

None known.

Specific Hazards Arising from the Product

Can ignite if strongly heated. Heating increases the release of toxic vapour.

In a fire, the following hazardous materials may be generated: very toxic carbon monoxide, carbon dioxide; corrosive, oxidizing nitrogen oxides; toxic chemicals.

Special Protective Equipment and Precautions for Fire-fighters

Approach fire from upwind to avoid hazardous vapours or gases. Before entry, especially into confined areas, use an appropriate monitor to check for: toxic gases or vapours.

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Fire-fighters may enter the area if positive pressure SCBA and full Bunker Gear is worn.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal Precautions, Protective Equipment, and Emergency Procedures

Increase ventilation to area or move leaking container to a well-ventilated and secure area. Do not touch damaged containers or spilled product unless wearing appropriate protective equipment. Use the personal protective equipment recommended in Section 8 of this safety data sheet. Remove or isolate incompatible materials as well as other hazardous materials.

Environmental Precautions

It is good practice to prevent releases into the environment. If the spill is inside a building, prevent product from entering drains, ventilation systems and confined areas.

Methods and Materials for Containment and Cleaning Up

Contain and soak up spill with absorbent that does not react with spilled product. Place used absorbent into suitable, covered, labelled containers for disposal.

SECTION 7. HANDLING AND STORAGE

Precautions for Safe Handling

Do not get in eyes, on skin or on clothing. Only use where there is adequate ventilation. Do not breathe in this product. Wash hands thoroughly after handling this product and before eating, using the washroom or leaving work area. Keep containers tightly closed when not in use or empty.

Conditions for Safe Storage

Type custom phrase here store in an area that is: well-ventilated, separate from incompatible materials (see Section 10: Stability and Reactivity). Comply with all applicable health and safety regulations, fire and building codes.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control Parameters

| Chemical Name | ACGIH TLV® | | OSHA PEL | | AIHA WEEL | |
|--|------------|------|-----------|----------|-----------|-----|
| | TWA | STEL | TWA | Ceiling | 8-hr TWA | TWA |
| 4,4'-Methylenediphenyl diisocyanate | | | 0.005 ppm | 0.02 ppm | | |
| Methylenediphenyl diisocyanate (mixed isomers) | 0.005 ppm | | | 0.02 ppm | | |
| Polymethylene polyphenyl isocyanate | 0.005 ppm | | | 0.02 ppm | | |

Appropriate Engineering Controls

Provide eyewash and safety shower if contact or splash hazard exists. Use stringent control measures such as process enclosure to prevent product release into the workplace.

Individual Protection Measures

Eye/Face Protection

Wear chemical safety goggles.

Skin Protection

Wear chemical protective clothing e.g. gloves, aprons, boots.

Respiratory Protection

Wear a NIOSH approved air-purifying respirator with an organic vapour cartridge.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Basic Physical and Chemical Properties

Appearance Dark brown liquid. Particle Size: Not applicable

Odour Musty

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| Odour Threshold | Not available |
| pH | Not available |
| Melting Point/Freezing Point | Not available (melting); Not available (freezing) |
| Boiling Range | 406 °F (208 °C) |
| Flash Point | Not available |
| Evaporation Rate | Not available |
| Flammability (solid, gas) | Not applicable |
| Upper/Lower Flammability or Explosive Limit | Not available (upper); Not available (lower) |
| Vapour Pressure | < 0.0001 mm Hg (0.0000 kPa) |
| Vapour Density (air = 1) | Not available |
| Relative Density (water = 1) | 1.24 at 25 °C |
| Solubility | Insoluble in water; Not available (in other liquids) |
| Partition Coefficient, n-Octanol/Water (Log Kow) | Not available |
| Auto-ignition Temperature | Not available |
| Decomposition Temperature | Not available |
| Viscosity | Not available (kinematic); Not available (dynamic) |
| Other Information | |
| Physical State | Liquid |
| Bulk Density | 77 lb/ft ³ (1234 kg/m ³) |

SECTION 10. STABILITY AND REACTIVITY

Reactivity

Not reactive under normal conditions of use.

Chemical Stability

Normally stable.

Possibility of Hazardous Reactions

Polymerizes in the presence of water, heat.

Conditions to Avoid

Prolonged exposure to high temperatures. Prolonged contact with water, moisture or humidity.

Incompatible Materials

Water, amines (e.g. triethylamine), strong bases (e.g. sodium hydroxide), alcohols (e.g. ethanol), copper alloys.

Hazardous Decomposition Products

Toxic, corrosive chemicals.

SECTION 11. TOXICOLOGICAL INFORMATION

Likely Routes of Exposure

Inhalation; skin contact; skin absorption; eye contact.

Acute Toxicity

| Chemical Name | LC50 | LD50 (oral) | LD50 (dermal) |
|--|--|--------------------|-----------------------|
| 4,4'-Methylenediphenyl diisocyanate | 178 mg/m ³ (rat) | 2200 mg/kg (mouse) | |
| Methylenediphenyl diisocyanate (mixed isomers) | 369 mg/m ³ (male rat) (4-hour exposure) | 2200 mg/kg (mouse) | > 9400 mg/kg (rabbit) |

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|-------------------------------------|---|--------------------|-----------------------|
| Polymethylene polyphenyl isocyanate | 490 mg/m ³ (rat) (4-hour exposure) | 2200 mg/kg (mouse) | > 9400 mg/kg (rabbit) |
|-------------------------------------|---|--------------------|-----------------------|

Skin Corrosion/Irritation

Animal tests show mild irritation.

Serious Eye Damage/Irritation

Animal tests show mild irritation.

STOT (Specific Target Organ Toxicity) - Single Exposure

Inhalation

May cause nose and throat irritation. At high concentrations may cause lung injury.

Ingestion

May cause irritation of the mouth, throat and stomach. Symptoms may include nausea, vomiting, stomach cramps and diarrhea.

STOT (Specific Target Organ Toxicity) - Repeated Exposure

May cause irritation of the respiratory system. May cause respiratory tract injury.

Respiratory and/or Skin Sensitization

Respiratory sensitizer. Skin sensitizer.

Carcinogenicity

Not known to cause cancer.

Reproductive Toxicity

Development of Offspring

Animal studies show effects on the offspring. However, these effects are only seen with significant toxicity in the mothers.

Sexual Function and Fertility

Not known to cause effects on sexual function or fertility.

Effects on or via Lactation

Not known to cause effects on or via lactation.

Germ Cell Mutagenicity

Not known to be a mutagen.

SECTION 12. ECOLOGICAL INFORMATION

Persistence and Degradability

Half-life of more than 10 but less than or equal to 50 days, worst-case. (4,4'-Methylenediphenyl diisocyanate)

Bioaccumulative Potential

N-Octanol/Water Partition Coefficient (Log Kow): 1.90. (4,4'-Methylenediphenyl diisocyanate)

SECTION 13. DISPOSAL CONSIDERATIONS

Disposal Methods

Contact local environmental authorities for approved disposal or recycling methods in your jurisdiction.

SECTION 14. TRANSPORT INFORMATION

Not regulated under Canadian TDG regulations. Not regulated under US DOT Regulations. Not regulated under IATA Regulations.

| Regulation | UN No. | Proper Shipping Name | Transport Hazard Class(es) | Packing Group |
|------------|--------|----------------------|----------------------------|---------------|
| US DOT | | Non-Regulated | | |
| IATA (Air) | | Non-Regulated | | |

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|--------------|--|---------------|--|--|
| IMO (Marine) | | Non-Regulated | | |
| Canadian TDG | | Non-Regulated | | |

Transport in Bulk according to International Maritime Organization Instruments

Not applicable

Other Information Reportable Quantity: 5435 kg (11982 lb) When this product is shipped in containers of smaller size than the product reportable quantity (RQ), this material is considered non-regulated for transport. If this product is in a package of a size greater than the RQ, it is considered an "other regulated substances, liquid, n.o.s. (4,4-Diphenylmethane Diisocyanate (MDI))," hazard class 9, packing group III, UN3082.

SECTION 15. REGULATORY INFORMATION

Safety, Health and Environmental Regulations

Canada

Domestic Substances List (DSL) / Non-Domestic Substances List (NDSL)

All ingredients are listed on the DSL/NDSL.

CEPA - National Pollutant Release Inventory (NPRI)

Part 1A. (Polymethylene polyphenyl isocyanate) Part 1A. (4,4'-Methylenediphenyl diisocyanate)

USA

Toxic Substances Control Act (TSCA) Section 8(b)

All ingredients are listed on the TSCA Inventory.

Additional USA Regulatory Lists

CERCLA: RQ: 5000 lb. (4,4'-Methylenediphenyl diisocyanate) SARA Title III - Section 311/312: Acute Health Hazard, Chronic Health Hazard. SARA Title III - Section 313. (4,4'-Methylenediphenyl diisocyanate). (Polymethylene polyphenyl isocyanate)

SECTION 16. OTHER INFORMATION

NFPA Rating **Health - 2** **Flammability - 1** **Instability - 1**

SDS Prepared By B.E.R

Phone No. (315) 782-3000

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Revision Indicators Revision 5
The following SDS content was changed on April 30, 2020:
reviewed and approved

Key to Abbreviations ACGIH® = American Conference of Governmental Industrial Hygienists
HSDB® = Hazardous Substances Data Bank
IARC = International Agency for Research on Cancer
NFPA = National Fire Protection Association NIOSH = National Institute for Occupational Safety and Health
NTP = National Toxicology Program
OSHA = US Occupational Safety and Health Administration
RTECS® = Registry of Toxic Effects of Chemical Substances

References CHEMINFO database. Canadian Centre for Occupational Health and Safety (CCOHS).
HSDB® database. US National Library of Medicine. Available from Canadian Centre for Occupational Health and Safety (CCOHS). NIOSH Pocket Guide database. National Institute for Occupational Safety and Health. Available from Canadian Centre for Occupational Health and Safety (CCOHS). Registry of Toxic Effects of Chemical Substances (RTECS®) database. Dassault Systèmes/BIOVIA ("BIOVIA"). Available from Canadian Centre for Occupational Health and Safety (CCOHS).

Disclaimer NOTE: The information contained herein is, to the best of our knowledge, accurate and

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reliable. However, no warranty is expressed or implied regarding the accuracy of this information, or the results to be obtained from the use thereof.