

# SPI Supplies Division

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Manufacturer's CAGE: 1P573

# Safety Data Sheet

Date Effective: December 9, 2014

SPI #02828-AF

SPI-Chem™ NMA (Nadic Methyl Anhydride)  
Hardener for Epoxy Resins

Component of 02660-AB SPI-Pon™ 812 Embedding  
Kit

Component of 02662-AB SPI-Chem™ Quetol™ 651  
NSA Resin Kit

Component of 02663-AB SPI-Pon™ 812 Kit, BDMA  
Formulation

## Section 1: Identification

Chemical Name/Synonyms..... Nadic Methyl Anhydride;  
..... Methyl-(endo)-5-norbornene-2,3-dicarboxylic anhydride METH E

Chemical family.....Anhydride

Emergencies

Contacting CHEMTREC:

24 Hour Emergency Use Only #'s...

Worldwide phone: 1-(703)-527-3887

Worldwide FAX: 1-(703)-741-6090

Toll-free phone: 1-(800)-424-9300 USA only

Product or Trade Name..... **SPI-Chem™ NMA (Nadic Methyl Anhydride) Hardener for Epoxy Resins**

CAS #'s..... 25134-21-8; 826-62-0

### OSHA Hazards:

Harmful by ingestion; Skin and respiratory sensitizer; Corrosive

### GHS Classification:

Acute toxicity, Oral (Category 4)

Acute toxicity, Dermal (Category 5)

Skin corrosion (Category 1C)

Serious eye damage (Category 1)

Respiratory sensitization (Category 1)

Skin sensitization (Category 1)

### GHS Label elements

Pictogram



Signal Word.....Danger

**Hazard Statements:**

- H302 Harmful if swallowed
- H313 May be harmful in contact with skin
- H315 Causes skin irritation
- H317 May cause an allergic skin reaction
- H318 Causes serious eye damage
- H334 May cause allergy or asthma symptom or breathing difficulties if inhaled

**Precautionary Statements:**

- P261 Avoid breathing dust/fume/gas/mist/vapors/spray
- P280 Wear protective gloves/protective clothing/eye protection/face protection
- P302+352: IF ON SKIN: Wash with soap and water
- P305+351+338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do – continue rinsing.
- P337+313: If eye irritation persists get medical advice/attention.

**Hazardous Material Information System USA**

- Health..... 2
- Fire Hazard..... 1
- Reactivity..... 0
- Personal Protection.....

**NFPA Rating (estimated)**

- Health..... 2
- Flammability..... 1
- Reactivity..... 0

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## Section 2: Composition

Component Name	CAS #	Percent	EINECS/ELINCS
1,2,3,6-Tetrahydromethyl-3-6-methanophthalic anhydride	25134-21-8	85%	246-644-8
endo-3,6-Methylene-1,2,3,6-tetrahydrophthalic anhydride	862-62-0	15%	212-557-9

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## Section 3: Hazard Identification

**Emergency overview:**

- Harmful
- Irritating to the eyes
- Irritating to the respiratory system
- Irritating to the skin
- Risk of serious damage to eyes
- Harmful if swallowed
- May cause sensitization by inhalation

**Appearance:** Pale yellow liquid

**Flash Point:** 135°C (open cup); 110°C (closed cup)

**Target Organs:** Eyes, Respiratory System, Skin

**Potential Health Effects**

**Eye:** Irritating to the eyes. Risk of serious damage to eyes.

**Skin:** Irritating to the skin.

**Ingestion:** Harmful if swallowed.

**Ingestion:** Harmful if swallowed.

**Inhalation:** Irritating to the respiratory system. May cause sensitization by inhalation or skin contact.

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## Section 4: First Aid Measures

**Eyes:** In case of eye contact, immediately flush eyes with copious amounts of water for at least 15 minutes, holding eyelids open. Seek immediate medical attention.

**Skin:** In case of skin contact, immediately wash skin with soap and copious amounts of water. Seek medical attention.

**Ingestion:** Call a physician immediately. Wash mouth out with water provided person is conscious, then drink plenty of water. Never give anything by mouth to an unconscious person. Seek immediate medical attention.

**Inhalation:** If inhaled, remove to fresh air. If breathing irregular or not breathing, give artificial respiration. If breathing is difficult, give oxygen. If symptoms persist, seek medical attention. Do not induce vomiting without medical advice.

**Notes to Physician:** Treat symptomatically and supportively.

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## Section 5: Fire Fighting Measures

Suitable extinguishing media: Water spray, dry powder, foam.

Specific hazards during fire fighting: Heating or fire can release toxic gas.

Special protective equipment for fire-fighters: In the event of fire, wear self-contained breathing apparatus.

Additional advice: Use water spray to cool unopened containers.

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## Section 6: Accidental Release Measures

**General Information:**

Wear respirator, chemical safety goggles, rubber boots, heavy rubber gloves.

**Spills/Leaks:**

Prevent product from entering drains. Do not flush into surface water or sewer system. Absorb on sand or vermiculite and place in closed containers for disposal. Ventilate area. Wash spill site once pick-up is complete.

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## Section 7: Handling and Storage

### Handling

Avoid contact with skin and eyes. Provide sufficient air exchange and/or exhaust in work rooms. Take precautionary measures against static discharges.

### Storage

Keep container tightly closed. To maintain product quality, do not store in heat or direct sunlight. Keep in a dry, cool and well ventilated place.

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## Section 8: Exposure Controls and Personal Protection

### Engineering Controls:

Mechanical exhaust, safety shower and eye wash required.

### Exposure Limits:

Chemical Component:	ACGIH	NIOSH	OSHA - Final PELs
CAS# 25134-21-8	n/a	n/a	n/a
CAS# 862-62-0	n/a	n/a	n/a

**OSHA Vacated PELs:** n/a

n/a = not available

### Personal Protective Equipment

**Eyes:** Chemical safety goggles

**Skin:** Chemical-resistant gloves

**Clothing:** Protective clothing to avoid skin contact

### Respirators:

Follow the OSHA respirator regulations found in 29CFR 1910.134 or European Standard EN 149. Always use a NIOSH or European Standard EN 149 approved respirator when necessary.

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## Section 9: Physical and Chemical Properties

<b>Physical State:</b>	Liquid
<b>Appearance:</b>	Light yellow
<b>Odor:</b>	Light aromatic
<b>pH:</b>	n/a
<b>Vapor Pressure:</b>	13hPa (152°C)
<b>Vapor Density:</b>	n/a
<b>Evaporation Rate:</b> n/a	
<b>Viscosity:</b> (dynamic)	235 mPa·s(25°C) 32 mPa·s(60°C)
<b>Boiling Point:</b>	210°C
<b>Freezing/Melting Point:</b>	-25°C

**Autoignition Temperature:** n/a  
**Flash Point:** 135°C (open cup); 110°C (closed cup)  
**Decomposition Temperature:** n/a  
**Explosion Limits:**  
    **Lower:** n/a  
    **Upper:** n/a  
**Solubility in water:** 120 g/l (20°C)  
**Specific Gravity/Density:** 1.229 g/cm<sup>3</sup> (25°C)  
**Molecular Formula:** CAS# 25134-21-8: C<sub>10</sub>H<sub>10</sub>O<sub>3</sub>  
CAS# 826-62-0: C<sub>9</sub>H<sub>8</sub>O<sub>3</sub>  
**Molecular Weight:** CAS# 25134-21-8: 178.19  
CAS# 826-62-0: 164.16

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## Section 10: Stability and Reactivity

### Chemical Stability:

Stable under normal conditions.

### Conditions to Avoid:

Heat. Exposure to moisture.

### Incompatibility with Other Materials:

Strong bases, strong acids, oxidizing agents.

### Hazardous Decomposition of Products:

Toxic organic vapors/fumes; carbon oxides

### Hazardous Polymerization:

Hazardous polymerization may occur when heating in the presence of sodium ions or amines.

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## Section 11: Toxicological Information

### RTECS#:

CAS# 25134-21-8: RB9100000

CAS# 826-62-0: DT5600000

### LD<sub>50</sub>/LC<sub>50</sub> Information:

CAS #: 25134-21-8:

LD50 Acute oral toxicity, rat: 914 mg/kg

CAS# 626-62-0:

### Skin corrosion/irritation

Skin - rabbit - Mild skin irritation - 24 h

### Serious eye damage/eye irritation

Eyes - rabbit - Severe eye irritation - 24 h

**Carcinogenicity:** n/a

**ACGIH:** n/a

**California:** n/a

**NIOSH:** n/a

**NTP:** n/a

**OSHA:** n/a

**IARC:** n/a  
**Teratogenicity:** n/a  
**Reproductive Effects:** n/a  
**Neurotoxicity:** n/a  
**Mutagenicity:** n/a  
**Other Studies:** n/a

n/a = not available

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## Section 12: Ecological Information

There is no data available for this product.

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## Section 13: Disposal Considerations

Waste from residues: The organic ingredients can be incinerated in a suitable installation when in accordance with federal, state, and local regulations. Contact waste disposal services.

Contaminated packaging: Where possible recycling is preferred to disposal or incineration.

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## Section 14: Transport Information

Proper shipping name: Corrosive Liquids, N.O.S.  
Chemical name: Methyl Norbornene Dicarboxylic Anhydride  
UN#: UN1760  
Class: 8  
Packing Group: III  
Label: Corrosive

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## Section 15: Regulatory Information

### United States:

#### TSCA

CAS# 25134-21-8 is listed on the TSCA inventory.  
CAS# 826-62-0 is listed on the TSCA inventory.

#### Health & Safety Reporting List

None of the chemicals in this material is on the Health & Safety Reporting List.

#### Chemical Test Rules

None of the chemicals in this product has a Chemical Test Rule.

#### Section 12b:

None of the chemicals in this product is listed in TSCA Section 12b.

#### TSCA Significant New Use Rule:

None of the chemicals in this product has a SNUR under TSCA.

#### CERCLA Section 103:

None of the chemicals in this product is listed under CERCLA Section 103.

#### SARA 311/312:

Acute Health Hazard

**OSHA:**

Harmful by ingestion, Skin and respiratory sensitizer, Corrosive

**State Right-to Know:**

CAS# 25134-21-8 is listed on the New Jersey and Pennsylvania Right-to-Know Lists.

CAS# 826-62-0 is listed on the New Jersey and Pennsylvania Right-to-Know Lists.

**California Prop. 65:**

None of the chemicals in this product is listed under California Prop. 65.

**CANADA**

CAS# 25134-21-8 is listed on the DSL List.

CAS# 826-62-0 is listed on the DSL List.

WHMIS: Class E - Corrosive

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## Section 16: Other Information

**Disclaimer of Liability:**

Caution! Do not use SPI Supplies products or materials in applications involving implantation within the body; direct or indirect contact with the blood pathway; contact with bone, tissue, tissue fluid, or blood; or prolonged contact with mucous membranes. Products offered by SPI Supplies are not designed or manufactured for use in implantation in the human body or in contact with internal body fluids or tissues. SPI Supplies will not provide to customers making devices for such applications any notice, certification, or information necessary for such medical device use required by US FDA (Food and Drug Administration) regulation or any other statute. SPI Supplies and Structure Probe, Inc. make no representation, promise, express warranty or implied warranty concerning the suitability of these materials for use in implantation in the human body or in contact with internal body tissues of fluids.

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