

SAFETY DATA SHEET

Preparation Date: 5/1/2019

Revision date 5/1/2019

Revision Number: G1

1. IDENTIFICATION

Product identifier

Product code: N1001
Product Name: NADIC(R) METHYL ANHYDRIDE

Other means of identification

Synonyms: 4,7-Methanoisobenzofuran-1,3-dione, 3a,4,7,7a-tetrahydromethyl-Methylbicyclo(2.2.1)heptene-2,3-dicarboxylic anhydride isomers
 Methylendic anhydride
CAS #: 25134-21-8
RTECS # RB9100000
CI#: Not available

Recommended use of the chemical and restrictions on use

Recommended use: No information available.
Uses advised against No information available

Supplier: Spectrum Chemical Mfg. Corp
 14422 South San Pedro St.
 Gardena, CA 90248
 (310) 516-8000

Order Online At: <https://www.spectrumchemical.com>
Emergency telephone number Chemtrec 1-800-424-9300
Contact Person: Tom Tyner (USA - West Coast)
Contact Person: Ibad Tirmiz (USA - East Coast)

2. HAZARDS IDENTIFICATION

Classification

This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Considered a dangerous substance or mixture according to the Globally Harmonized System (GHS)

Acute toxicity - Oral	Category 4
Skin corrosion/irritation	Category 1
Serious eye damage/eye irritation	Category 1
Respiratory sensitization	Category 1

Label elements

Danger

Hazard statements

Harmful if swallowed
 Causes severe skin burns and eye damage
 May cause allergy or asthma symptoms or breathing difficulties if inhaled



Hazards not otherwise classified (HNOC)

Not Applicable

Other hazards

Not available

Precautionary Statements - Prevention

Wash face, hands and any exposed skin thoroughly after handling
 Do not eat, drink or smoke when using this product
 Do not breathe mist or vapors
 Wear protective gloves/protective clothing/eye protection/face protection
 In case of inadequate ventilation wear respiratory protection

Precautionary Statements - Response

Immediately call a POISON CENTER or physician
 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or physician.
 IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water
 Wash contaminated clothing before reuse
 IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER or physician.
 IF SWALLOWED: Call a POISON CENTER or physician if you feel unwell
 Rinse mouth
 Do NOT induce vomiting

Precautionary Statements - Storage

Store locked up

Precautionary Statements - Disposal

Dispose of contents and container to an approved waste disposal plant in accordance with local, regional, national and international regulations as applicable

3. COMPOSITION/INFORMATION ON INGREDIENTS

Component	CAS No	Weight-%
Nadic® Methyl Anhydride	25134-21-8	100

4. FIRST AID MEASURES

First aid measures

General Advice: National Capital Poison Center in the United States can provide assistance if you have a poison emergency and need to talk to a poison specialist. Call 1-800-222-1222. Ensure that medical personnel are aware of the material(s)

involved and take precautions to protect themselves. First aider needs to protect himself.

Skin Contact: Wash off immediately with soap and plenty of water. Remove all contaminated clothes and shoes. Continue flushing with plenty of water for at least 15 minutes. Immediate medical attention is required. Call a physician immediately.

Eye Contact: Flush eyes with water for 15 minutes. Immediate medical attention is required. Call a physician immediately.

Inhalation: Move to fresh air. If breathing is difficult, give oxygen. If not breathing, give artificial respiration. **WARNING!** It may be hazardous to the person providing aid to give mouth-to-mouth resuscitation when the inhaled or ingested material is toxic, infectious or corrosive. Do not use mouth-to-mouth resuscitation if victim ingested or inhaled the substance; induce artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. Call a physician immediately.

Ingestion: Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Immediate medical attention is required. Call a physician or Poison Control Center immediately.

Most important symptoms and effects, both acute and delayed

Symptoms Severe skin and eye irritation or burns
Causes digestive (gastrointestinal) tract irritation
May cause gastrointestinal (digestive) tract burns
Irritating to respiratory system
It may cause chemical burns of the respiratory tract
Dyspnea (Difficulty breathing and shortness of breath)
May cause cyanosis

Indication of any immediate medical attention and special treatment needed

Notes to Physician: Treat symptomatically.

Protection of first-aiders

First-Aid Providers: Avoid exposure to blood or body fluids. Wear gloves and other necessary protective clothing. Dispose of contaminated clothing and equipment as bio-hazardous waste.

5. FIRE-FIGHTING MEASURES

Extinguishing Media

Suitable Extinguishing Media: Carbon dioxide (CO2). Dry chemical. Water spray mist or foam.

Unsuitable Extinguishing Media: No information available.

Specific hazards arising from the chemical

Hazardous combustion products Carbon Monoxide, Carbon Dioxide.

Specific hazards May be combustible at high temperatures. May be ignited by heat, sparks or flames.

Special Protective Actions for Firefighters

Specific Methods: No information available

Special Protective Equipment for Firefighters: As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent)

and full protective gear

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Personal Precautions: Ensure adequate ventilation. Keep people away from and upwind of spill/leak. Use personal protective equipment. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Avoid contact with skin, eyes and clothing. Remove all sources of ignition.

Environmental precautions Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Prevent entry into waterways, sewers, basements or confined areas.

Methods and material for containment and cleaning up

Methods for containment Stop leak if you can do it without risk. Absorb spill with inert material (e.g. vermiculite, dry sand or earth). In case of large spill, dike if needed. Dike far ahead of liquid spill for later disposal.

Methods for cleaning up Use appropriate tools to put the spilled material in a suitable chemical waste disposal container. Clean contaminated surface thoroughly.

7. HANDLING AND STORAGE

Precautions for safe handling

Technical Measures/Precautions:

Provide sufficient air exchange and/or exhaust in work rooms. Remove all sources of ignition. Keep away from incompatible materials.

Safe Handling Advice

Wear personal protective equipment. Avoid contact with skin, eyes and clothing. Do not breathe vapors or spray mist. Do not ingest. Keep away from heat and sources of ignition. Handle in accordance with good industrial hygiene and safety practice.

Conditions for safe storage, including any incompatibilities

Technical Measures/Storage Conditions:

Keep container tightly closed in a dry and well-ventilated place. Store at room temperature in the original container. Moisture sensitive. Protect from moisture. Store away from incompatible materials.

Incompatible Materials:

Strong bases
Strong acids
Strong oxidizing agents

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

National occupational exposure limits

United States

Component	CAS No	OSHA	NIOSH	ACGIH	AIHA WEEL
Nadic® Methyl Anhydride	25134-21-8	None	None	None	None

Canada

Component	CAS No	Canada - Alberta	Canada - British Columbia	Canada - Ontario	Canada - Quebec
Nadic® Methyl Anhydride	25134-21-8	None	None	None	None

Australia and Mexico

Component	CAS No	Australia	Mexico
Nadic® Methyl Anhydride	25134-21-8	None	None

Appropriate engineering controls

Engineering measures to reduce exposure:

Ensure adequate ventilation. Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapors and mist below their respective threshold limit value.

Individual protection measures, such as personal protective equipment

Personal Protective Equipment

Eye protection: Goggles or Face-shield.

Skin and body protection: Long sleeved clothing
Chemical resistant apron
Gloves
If working with large quantities:
Chemical resistant protective suit
Boots

Respiratory protection: Vapor respirator. Be sure to use an approved/certified respirator or equivalent.

Hygiene measures: Avoid contact with skin, eyes and clothing.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state:

Liquid

Appearance:

Viscous.

Color:

Colorless to pale yellow.

Odor:

No information available.

Taste

No information available.

Formula

C10H10O3

Molecular/Formula weight (g/mole):

178.19

Flammability (solid, gas)

no data available

Flashpoint (°C/°F):

135 °C/275 °F

Flash Point Tested according to:

Not available

Autoignition Temperature (°C/°F):

No information available

Lower Explosion Limit (%):

No information available

Upper Explosion Limit (%):

No information available

Melting point/range(°C/°F):

No information available

Decomposition temperature(°C/°F):

No information available

Boiling point/range(°C/°F):

No information available

Bulk density:

No information available

Density (g/cm3):

No information available

Specific gravity:

1.200-1.250

pH

No information available

Vapor pressure @ 20°C (kPa):

No information available

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Evaporation rate:
No information available

Vapor density:
6.14

VOC content (g/L):
No information available

Odor threshold (ppm):
No information available

**Partition coefficient
(n-octanol/water):**
No information available

Viscosity:
175-225 CP @ 25 deg. C

Miscibility:
Miscible with Acetone
Miscible with Benzene

Solubility:
No information available

10. STABILITY AND REACTIVITY

Reactivity
No information available

Chemical stability

Stability: Moisture Sensitive. Stable under recommended storage conditions.

Possibility of Hazardous Reactions: Hazardous polymerization does not occur

Conditions to avoid: Heat. Ignition sources. Exposure to moisture. Exposure to moist air. Incompatible materials.

Incompatible Materials: Strong bases
Strong acids
Strong oxidizing agents

Hazardous decomposition products: No information available.

Other Information
Corrosivity: No information available

Special Remarks on Corrosivity: No information available

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Principal Routes of Exposure:
Ingestion. Inhalation. Skin. Eyes.

Acute Toxicity

Component Information

Nadic® Methyl Anhydride

CAS No | 25134-21-8

LD50/oral/rat = 958 mg/kg Oral LD50 Rat; 914 mg/kg Oral LD50 Rat

LD50/oral/mouse = No information available

LD50/dermal/rabbit = > 2000 mg/kg Dermal LD50 Rabbit

LD50/dermal/rat = 4920 mg/kg Dermal LD50 Rat

LC50/inhalation/rat = No information available

LC50/inhalation/mouse = No information available
Other LD50 or LC50 information = No information available

Product Information

LD50/oral/rat =
Value - Acute Tox = 914 mg/kg

LD50/oral/mouse =
Value - Acute Tox Oral = No information available

LD50/dermal/rabbit
Value - Acute Tox = > 2000 mg/kg

LD50/dermal/rat
VALUE - Acute Tox Dermal = 4920 mg/kg

LC50/inhalation/rat
VALUE-Vapor = No information available
VALUE-Gas = No information available
VALUE-Dust/Mist = No information available

LC50/Inhalation/mouse
VALUE-Vapor = No information available
VALUE - Gas = No information available
VALUE - Dust/Mist = No information available

Symptoms

Skin Contact: Corrosive. Causes severe irritation and burns.

Eye Contact: Corrosive. Severe eye irritation. Causes eye burns. Possible eye damage.

Inhalation Causes respiratory tract irritation with possible chemical burns.

Ingestion Harmful if swallowed. Corrosive. Corrosive to the mouth, throat, and stomach. Causes digestive (gastrointestinal) tract irritation. Causes digestive or gastrointestinal tract burns. May affect behavior/central nervous system (somnolence). May affect respiration (dyspnea - difficulty breathing and shortness of breath). May cause cyanosis. May affect urinary system (kidneys).

Aspiration hazard No information available.

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Chronic Toxicity No information available.

Sensitization: No information available.

Mutagenic Effects: No information available

Carcinogenic effects: Not considered carcinogenic.

Component	CAS No	IARC	ACGIH - Carcinogens	NTP	OSHA HCS - Carcinogens	Australia - Notifiable Carcinogenic	Australia - Prohibited Carcinogenic
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						Substances	Substances
Nadic® Methyl Anhydride	25134-21-8	Not listed	Not listed				

ACGIH (American Conference of Governmental Industrial Hygienists)

IARC (International Agency for Research on Cancer)

NTP (National Toxicology Program)

OSHA (Occupational Safety and Health Administration of the US Department of Labor)

Reproductive toxicity No data is available

Reproductive Effects: No information available

Developmental Effects: No information available

Teratogenic Effects: No information available

Specific Target Organ Toxicity

STOT - single exposure No information available.

STOT - repeated exposure No information available.

Target Organs: No information available.

12. ECOLOGICAL INFORMATION

Ecotoxicity

Ecotoxicity effects: No data available.

Persistence and degradability: No information available

Bioaccumulative potential: No information available.

Mobility in soil No information available

Other adverse effects No information available.

13. DISPOSAL CONSIDERATIONS

Disposal Methods

Waste from residues / unused products:

Waste must be disposed of in accordance with Federal, State and Local regulation.

Contaminated packaging:

Empty containers should be taken for local recycling, recovery or waste disposal

Component	CAS No	RCRA - F Series Wastes	RCRA - K Series Wastes	RCRA - P Series Wastes	RCRA - U Series Wastes
Nadic® Methyl Anhydride	25134-21-8	None	None	None	None

14. TRANSPORT INFORMATION

DOT

UN-No: UN1760

Proper Shipping Name: Corrosive liquids, n.o.s. (methyl-5-norbornene-2,3-dicarboxylic anhydride)

Hazard Class 8

Subsidiary Class No information available
Packing group: III
Emergency Response Guide Number 154
Marine Pollutant No data available
DOT RQ (lbs): No information available
Special Provisions IB3, T7, TP1, TP28
Symbol(s): [DOT]: (G) - Identifies proper shipping names for which one or more technical names of the hazardous material must be entered in parentheses, in association with the basic description.
Description: UN1760, Corrosive liquids, n.o.s., 8, III

TDG (Canada)

UN-No: UN1760
Proper Shipping Name: Corrosive liquid, n.o.s.
Hazard Class 8
Subsidiary Risk: No information available
Packing Group: III
Marine Pollutant No Information available
Description: UN1760, Corrosive liquid, n.o.s., 8, III

ADR

UN Number UN1760
Proper Shipping Name: Corrosive liquid, n.o.s.
Transport hazard class(es) 8
Packing group III
Subsidiary Risk: No information available
Special Provisions 274
Description: UN1760, Corrosive liquid, n.o.s., 8, III

IMDG

UN-No: UN1760
Proper Shipping Name: Corrosive liquids, n.o.s. (methyl-5-norbornene-2,3-dicarboxylic anhydride)
Hazard Class: 8
Subsidiary Risk: No information available
Packing Group: III
Marine Pollutant No information available
EMS: F-A
Special Provisions 274, 223
Description UN1760, Corrosive liquid, n.o.s. (NADIC® METHYL ANHYDRIDE), 8, III

RID

UN Number UN1760
Proper Shipping Name: Corrosive liquid, n.o.s.
Transport hazard class(es) 8
Subsidiary Risk: No information available
Packing group III
Special Provisions 274
Description: UN1760, Corrosive liquid, n.o.s., 8, III

ICAO (air)

UN-No: UN1760
Proper Shipping Name: Corrosive liquid, n.o.s.
Hazard Class 8
Subsidiary Risk: No information available
Packing Group: III
Description: UN1760, Corrosive liquid, n.o.s., 8, III
Special Provisions A3

IATA

UN Number UN1760
Proper Shipping Name: Corrosive liquid, n.o.s.
Transport hazard class(es) 8
Subsidiary Risk: No information available
Packing group III
Precautionary Statements - Response 8L
Special Provisions No information available
Description: UN1760, Corrosive liquid, n.o.s., 8, III

15. REGULATORY INFORMATION

International Inventories

Component	CAS No	U.S. TSCA	KOREA KECL	Philippines (PICCS)	Japan ENCS	China IECSC	Australia (AICS)	EINECS-No.
Nadic® Methyl Anhydride	25134-21-8	PresentACTIV E	Present KE-33483	Present	Present (4)-298	Present	Present	Present 246-644-8

U.S. Regulations**California Prop. 65: Safe Drinking Water and Toxic Enforcement Act of 1986.****Chemicals Known to the State of California to Cause Cancer:**

This product does not contain a chemical requiring a warning under California Prop. 65. (See table below)

Chemicals Known to the State of California to Cause Reproductive Toxicity:

This product does not contain a chemical requiring a warning under California Prop. 65. (See table below)

Component	CAS No	Carcinogen	Developmental Toxicity	Male Reproductive Toxicity	Female Reproductive Toxicity:
Nadic® Methyl Anhydride	25134-21-8	Not Listed	Not Listed	Not Listed	Not Listed

CERCLA/SARA

Component	CAS No	CERCLA - Hazardous Substances and their Reportable Quantities	Section 302 Extremely Hazardous Substances and TPQs	Section 302 Extremely Hazardous Substances and RQs	Section 313 - Chemical Category	Section 313 - Reporting de minimis
Nadic® Methyl Anhydride	25134-21-8	None	None	None	None	None

U.S. TSCA

Component	CAS No	TSCA Section 5(a)2 - Chemicals With Significant New Use Rules (SNURS)	TSCA 8(d) -Health and Safety Reporting
Nadic® Methyl Anhydride	25134-21-8	Not Applicable	Not Applicable

Canada**WHMIS 2015 - GHS Classifications**

WHMIS 2015 Hazard Classification

The WHMIS 2015 classification of this product has not been validated or reviewed yet.

Information:

Canada Hazardous Products Regulation This product has been classified according to the hazard criteria of the HPR (Hazardous Products Regulation) and the SDS contains all of the information required by the HPR

DSL/NDSL

Component	CAS No	Canada (DSL)	Canada (NDSL)
Nadic® Methyl Anhydride	25134-21-8	Present	Not Listed

Component	CAS No	CEPA Schedule I - Toxic Substances
Nadic® Methyl Anhydride	25134-21-8	Not listed
Component	CAS No	CEPA - 2010 Greenhouse Gases Subject to Mandatory Reporting
Nadic® Methyl Anhydride	25134-21-8	Not listed

EU Classification

EU GHS - SV - CLP 1272/2008

Component	CAS No	EU GHS - SV - CLP (1272/2008)
Nadic® Methyl Anhydride	25134-21-8	Acute Tox. 4 (H302); Skin Corr. 1B (H314); Eye Dam. 1 (H318); Resp. Sens. 1 (H334); Skin Sens. 1 (H317)

EU - CLP (1272/2008)

R-phrase(s)

Not determined

S -phrase(s)

none

Component	CAS No	Classification	Concentration Limits:	Safety Phrases
Nadic® Methyl Anhydride	25134-21-8		No information	

The product is classified in accordance with Annex VI to Directive 67/548/EEC

Indication of danger:

not determined

16. OTHER INFORMATION

Preparation Date: 5/1/2019
Revision date 5/1/2019
Prepared by: Sonia Owen

Disclaimer:

All chemicals may pose unknown hazards and should be used with caution. This Safety Data Sheet (SDS) applies only to the material as packaged. If this product is combined with other materials, deteriorates, or becomes contaminated, it may pose hazards not mentioned in this SDS. The physical properties reported in this SDS are obtained from the literature and do not constitute product specifications.

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End of Safety Data Sheet