

Material Safety Data Sheet

Nadone® (Cyclohexanone)

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: Nadone®

OTHER/GENERIC NAMES: Cyclohexanone

PRODUCT USE: Solvent and thinner in lacquers, insecticides, herbicides, photography, pharmaceuticals.

MANUFACTURER: Honeywell
101 Columbia Road
Box 1053
Morristown, New Jersey 07962-1053

FOR MORE INFORMATION CALL:
(Monday-Friday, 8:30am-5:00pm)
Customer Service
1-877-370-7007 (Toll Free)

IN CASE OF EMERGENCY CALL:
(24 Hours/Day, 7 Days/Week)
Health Emergencies: 1-800-498-5701
Transportation Emergencies:
1-800-424-9300 (CHEMTREC - Domestic)
703-527-3887 (CHEMTREC - International)

2. COMPOSITION/INFORMATION ON INGREDIENTS

<u>INGREDIENT NAME</u>	<u>CAS NUMBER</u>	<u>WEIGHT %</u>
Cyclohexanone	108-94-1	100

Trace impurities and additional material names not listed above may also appear in Section 15 towards the end of the MSDS. These materials may be listed for local "Right-To-Know" compliance and for other reasons.

3. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW: A clear, colorless to pale yellow liquid with a peppermint-like odor. Causes irritation to the skin, eyes, mucous membranes and respiratory tract. Can be absorbed through the skin causing systemic effects. Liquid is flammable.

POTENTIAL HEALTH HAZARDS

SKIN: Can be absorbed through the skin causing systemic effects similar to inhalation. Prolonged or repeated contact may cause mild to moderate irritation or dermatitis.

EYES: Severe irritant. May produce transient corneal damage.

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INHALATION: Irritating to the eyes, mucous membranes and respiratory tract. May cause labored breathing, central nervous system depression, tremors and decreased heart rate. At high concentrations, death from respiratory depression may occur. Repeated or prolonged exposures to high concentrations may cause kidney and liver damage.

INGESTION: Produces systemic effects similar to inhalation.

DELAYED EFFECTS: Liver and kidney damage, and blood and bone marrow effects have been reported in animals.

Ingredients found on one of the OSHA designated carcinogen lists are listed below.

<u>INGREDIENT NAME</u>	<u>NTP STATUS</u>	<u>IARC STATUS</u>	<u>OSHA LIST</u>
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No ingredients listed in this section

4. FIRST AID MEASURES

SKIN: Immediately wash with soap and water. Seek medical assistance for irritation or any other symptoms.

EYES: Immediately flush with water for at least 15 minutes. Get medical assistance

INHALATION: Remove to fresh air. If not breathing, apply artificial respiration, preferably mouth-to-mouth. Get medical assistance.

INGESTION: Do not induce vomiting unless advised to do so by a physician.

ADVICE TO PHYSICIAN: Treat according to symptoms present.

5. FIRE FIGHTING MEASURES

FLAMMABLE PROPERTIES

FLASH POINT: FLASH POINT: 46°C (114.8°F) FLASH POINT METHOD

FLASH POINT METHOD: Closed cup.

AUTOIGNITION TEMPERATURE: 423°C (793.4°F)

UPPER FLAME LIMIT (volume % in air): 12.75

LOWER FLAME LIMIT (volume % in air): 1.1

FLAME PROPAGATION RATE (solids): Not applicable.

OSHA FLAMMABILITY CLASS: Combustible liquid.

NFPA HAZARD ID (List 325M) Health = 1, Flammability = 2, Reactivity = 0

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EXTINGUISHING MEDIA:

Alcohol foam, carbon dioxide, dry chemical, or water spray. Avoid solid streams of water which may spread burning liquid.

UNUSUAL FIRE AND EXPLOSION HAZARDS:

Vapor is heavier than air and may travel a considerable distance to a source of ignition and flash back. Can react vigorously with oxidizing materials.

SPECIAL FIRE FIGHTING PRECAUTIONS/INSTRUCTIONS:

Wear self-contained breathing apparatus. Use water spray to keep fire exposed containers cool. Use water spray to disperse vapors and to protect personnel attempting to stop leak.

6. ACCIDENTAL RELEASE MEASURES

IN CASE OF SPILL OR OTHER RELEASE: (Always wear recommended personal protective equipment.)

Eliminate ignition sources. Use water spray to dilute spills to a nonflammable mixture. Contain liquid with dirt, sand, vermiculite or other noncombustible solids. Transfer to a metal container for disposal. Do not allow spills to enter drains, sewers or waterways.

Spills and releases may have to be reported to Federal and/or local authorities. See Section 15 regarding reporting requirements.

7. HANDLING AND STORAGE

NORMAL HANDLING: (Always wear recommended personal protective equipment.)

Wear adequate personal protective equipment. Avoid breathing vapor. Avoid contact with skin and eyes. Keep away from heat, sparks and open flame. Ground equipment and comply with the National Electric Code.

STORAGE RECOMMENDATIONS:

Store in a cool, dry, well-ventilated area away from sources of ignition. Keep away from strong oxidants.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

ENGINEERING CONTROLS:

Maintain vapor levels below the recommended TLV's and/or PEL's by use of adequate local or general exhaust system at product transfer/use areas.

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PERSONAL PROTECTIVE EQUIPMENT

SKIN PROTECTION:

Neoprene gloves, long sleeve shirt and trousers. Add rubber raincoat and pants if splashing or liquid contact is anticipated.

EYE PROTECTION:

Chemical safety goggles or face shield. Do not wear contact lenses.

RESPIRATORY PROTECTION:

None required for adequately ventilated work areas. For large spills, wear self-contained breathing apparatus. A full face respirator with organic cartridge may be used if vapor concentrations are under 1000 ppm.

ADDITIONAL RECOMMENDATIONS:

Eyewash station and washing facilities are recommended.

EXPOSURE GUIDELINES

INGREDIENT NAME

Cyclohexanone

ACGIH TLV

20 ppm (TWA) –
Skin; A3 (Confirmed
Animal Carcinogen with
Unknown Relevance to
Humans)

OSHA PEL

25 ppm (TWA) –
Skin. Z-1 PEL –
50 ppm.

OTHER LIMIT

Canada 25 ppm –
Skin.

- * = Limit established by Honeywell for internal use.
** = Workplace Environmental Exposure Level (AIHA).
*** = Biological Exposure Index (ACGIH).

OTHER EXPOSURE LIMITS FOR POTENTIAL DECOMPOSITION PRODUCTS: None

9. PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE: Clear colorless to pale yellow liquid.

PHYSICAL STATE: Liquid.

MOLECULAR WEIGHT 98.14

CHEMICAL FORMULA CH₂(CH₂)₄CO

ODOR: Peppermint-like.

SPECIFIC GRAVITY (water = 1.0): (Water - 1.0) 0.945

SOLUBILITY IN WATER (weight %): (Weight %) 5% @ 30°C

pH: Not applicable.

BOILING POINT: 155.6°C (312.1°F)

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MELTING POINT: -32.1°C (-25.8°F)
VAPOR PRESSURE: 3.95 mm Hg @ 20°C
VAPOR DENSITY (air = 1.0): (Air - 1.0) 3.4
EVAPORATION RATE: <1 **COMPARED TO:** Ether.
% VOLATILES: 100
FLASH POINT: 46°C (114.8°F)
(Flash point method and additional flammability data are found in Section 5.)

10. STABILITY AND REACTIVITY

NORMALLY STABLE? (CONDITIONS TO AVOID):

Stable under normal conditions.

INCOMPATIBILITIES:

Oxidizing agents, including nitric acid and peroxides.

HAZARDOUS DECOMPOSITION PRODUCTS:

None known

HAZARDOUS POLYMERIZATION:

Will not occur.

11. TOXICOLOGICAL INFORMATION

IMMEDIATE (ACUTE) EFFECTS:

LD50 (oral-rat): 1535 mg/kg
LD50 (oral -mouse): 1400 mg/kg
LD50 (skin-rabbit): 948 mg/kg

DELAYED (SUBCHRONIC AND CHRONIC) EFFECTS:

Liver and kidney damage reported in monkeys and rabbits (190 ppm) and rats (105.2 mg/m₃). Blood and bone marrow effects reported in rats, dogs and monkeys injected with 142-284 mg/kg

OTHER DATA:

None.

12. ECOLOGICAL INFORMATION

Breakdown via chemical, photochemical and microbial degradation in natural environment. Generally not degraded by hydrolysis. 300 ppm is safe for aquatic life. Halogenation may occur in aqueous environment. Octanol/water partition coefficient - 0.01

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13. DISPOSAL CONSIDERATIONS

RCRA

Is the unused product a RCRA hazardous waste if discarded? Yes.

If yes, the RCRA ID number is: U057 and D001

OTHER DISPOSAL CONSIDERATIONS: 40 CFR Section 268 should be consulted for federal regulatory requirement.

The information offered here is for the product as shipped. Use and/or alterations to the product such as mixing with other materials may significantly change the characteristics of the material and alter the RCRA classification and the proper disposal method.

14. TRANSPORT INFORMATION

US DOT HAZARD CLASS: Cyclohexanone, 3, UN 1915, III

US DOT ID NUMBER: UN 1915 (PIN # in Canada)

For additional information on shipping regulations affecting this material, contact the information number found in Section 1.

15. REGULATORY INFORMATION

TOXIC SUBSTANCES CONTROL ACT (TSCA)

TSCA INVENTORY STATUS: Material is on the TSCA Inventory.

OTHER TSCA ISSUES: None.

SARA TITLE III/CERCLA

"Reportable Quantities" (RQs) and/or "Threshold Planning Quantities" (TPQs) exist for the following ingredients.

<u>INGREDIENT NAME</u>	<u>SARA/CERCLA RQ (lb)</u>	<u>SARA EHS TPQ (lb)</u>
Cyclohexanone	5000	None

Spills or releases resulting in the loss of any ingredient at or above its RQ requires immediate notification to the National Response Center [(800) 424-8802] and to your Local Emergency Planning Committee.

SECTION 311 HAZARD CLASS: Immediate. Delayed. Fire.

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SARA 313 TOXIC CHEMICALS:

The following ingredients are SARA 313 "Toxic Chemicals". CAS numbers and weight percents are found in Section 2.

INGREDIENT NAME**COMMENT**

No ingredients listed in this section

STATE RIGHT-TO-KNOW

In addition to the ingredients found in Section 2, the following are listed for state right-to-know purposes.

INGREDIENT NAME**WEIGHT %****COMMENT**

No ingredients listed in this section

ADDITIONAL REGULATORY INFORMATION:

SOCMI chemical.

WHMIS CLASSIFICATION (CANADA):

B3, D1B, D2B.

Disclosure List Item Number 467.

This product has been classified in accordance with the hazard criteria of the CPR and the MSDS contains all the information required by the CPR.

FOREIGN INVENTORY STATUS:

Canadian DSL (Domestic Substance List).

EINECS (European Inventory of Existing Commercial Chemical Substances).

Mexico Hazard Identification Guidance List (NOM-018-STPS-2000).

16. OTHER INFORMATION

CURRENT ISSUE DATE: April 15, 2005

PREVIOUS ISSUE DATE: September 8, 2004

CHANGES TO MSDS FROM PREVIOUS ISSUE DATE ARE DUE TO THE FOLLOWING:

Corrected OSHA Flammability Class.

Added NFPA Hazard Class - 1/02

Included new ACGIH classification (A3) and revised TLV per the 2003 TLV/BEI documentation - 4/03.

Update Inventory Status and changes for Section 8 – 8/04.

Addition of Health Emergency Information.

Updated Canadian WHMIS classification.

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OTHER INFORMATION: UNITED NATIONS NUMBER:
ADR/RID CLASS:
PACKING GROUP:
IMDG CODE:
ICAO/IATA:
IMO SHIPPING NAME:
IATA SHIPPING NAME:
ADR SHIPPING NAME:
RID SHIPPING NAME: