



SAFETY DATA SHEET

Issuing Date 27-Jul-2017

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Revision Number 0

This document complies with the US OSHA Hazard Communication Standard (29 CFR 1910.1200), Canada WHMIS 2015 which includes the amended Hazardous Products Act (HPA) and the Hazardous Products Regulation (HPR), and Mexico's NMX-R-019-SC-2011.

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND THE COMPANY/UNDERTAKING

GHS product identifier

Product Name N.4

Other means of identification

UN-Number UN1208

Synonyms None

Recommended use of the chemical and restrictions on use

Recommended Use Viscometer and/or density measurement equipment calibration and performance verification reference standard

Uses advised against No information available

Supplier's details

Supplier Address

Cannon Instrument Company
2139 High Tech Rd.
State College, PA 16803-1733
TEL: (814) 353-8000; (800) 676-6232

Emergency telephone number

Emergency Telephone Number (800) 255-3924 Domestic CHEM-TEL Inc.
+1 (813) 248-0585 Overseas CHEM-TEL Inc. (Please Call Collect)

2. HAZARDS IDENTIFICATION

Classification

This product is considered hazardous according to the criteria set within the US OSHA Hazard Communication Standard (29 CFR 1910.1200), Canada WHMIS 2015 which includes the amended Hazardous Products Act (HPA) and the Hazardous Products Regulation (HPR), and Mexico's NMX-R-019-SC-2011.

Skin Corrosion/Irritation	Category 2
Reproductive Toxicity	Category 2
Specific Target Organ Systemic Toxicity (Single Exposure)	Category 3
Specific Target Organ Toxicity (Repeated Exposure)	Category 2
Aspiration Toxicity	Category 1
Flammable liquids	Category 2

Label Elements

Signal Word

Danger

**Hazard Statements**

Causes skin irritation
Suspected of damaging fertility or the unborn child
May cause drowsiness or dizziness
May cause damage to organs through prolonged or repeated exposure
May be fatal if swallowed and enters airways
Highly flammable liquid and vapor.

Physical and Health Hazards Not Otherwise Classified

Not applicable.

Precautionary Statements**Prevention**

- Obtain special instructions before use.
- Do not handle until all safety precautions have been read and understood.
- Wash face, hands and any exposed skin thoroughly after handling.
- Wear protective gloves/protective clothing/eye protection/face protection.
- Do not breathe dust/fume/gas/mist/vapors/spray.
- Use only outdoors or in a well-ventilated area.
- Keep away from heat/sparks/open flames/hot surfaces - No smoking.
- Keep container tightly closed.
- Ground/bond container and receiving equipment.
- Use explosion-proof electrical/ventilating/lighting/equipment.
- Use only non-sparking tools.
- Take precautionary measures against static discharge.
- Keep cool.

General Advice

- If exposed or you feel unwell: Call a POISON CENTER or doctor/physician

Skin

- If skin irritation occurs: Get medical advice/attention.
- IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
- Wash contaminated clothing before reuse.

Inhalation

- IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.

Ingestion

- IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician.
- Do NOT induce vomiting.

Fire

- In case of fire: Use CO2, dry chemical, or foam for extinction.

Storage

- Store locked up.
- Store in a well-ventilated place. Keep container tightly closed.

Disposal

- Dispose of contents/container to an approved waste disposal plant.

Other information

Toxic to aquatic life with long lasting effects.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	CAS-No	Weight %	Hazardous Material Information Review Act registry number (HMIRA registry #)	Date HMIRA filed and date exemption granted (if applicable)
n-Hexane	110-54-3	40-60	-	-
Hexane, Other Isomers	-	40-60	-	-
Methylcyclopentane	96-37-7	5-20	-	-
Naphtha, petroleum, hydrotreated light	64742-49-0	<15	-	-
Heptane, All Isomers	-	<3	-	-
Cyclohexane	110-82-7	<2	-	-

4. FIRST AID MEASURES

Description of necessary first-aid measures

Eye Contact	Immediately flush with plenty of water. After initial flushing, remove any contact lenses and continue flushing for at least 15 minutes. Obtain medical attention if irritation persists.
Skin Contact	Wash off immediately with soap and plenty of water removing all contaminated clothes and shoes. Get medical attention if irritation develops and persists.
Inhalation	IF INHALED: Remove to fresh air and keep at rest in a position comfortable for breathing. Artificial respiration and/or oxygen may be necessary. Get medical attention immediately if symptoms occur. If breathing has stopped, contact emergency medical services immediately.
Ingestion	Do NOT induce vomiting. Rinse mouth. Drink plenty of water. Never give anything by mouth to an unconscious person. Get medical attention.

Most important symptoms/effects, acute and delayed

Most Important Symptoms/Effects Difficulty in breathing. Coughing and/ or wheezing. Drowsiness. Dizziness. Nausea. Tremors. Headaches. Neurological disorders. Impairment of vision. Irritation.

Indication of immediate medical attention and special treatment needed, if necessary

Notes to Physician Aspiration hazard.

5. FIRE-FIGHTING MEASURES

<u>Suitable Extinguishing Media</u>	Carbon dioxide (CO ₂). Foam. Dry chemical. Water spray.
<u>Unsuitable Extinguishing Media</u>	CAUTION: Use of water spray when fighting fire may be inefficient.
<u>Specific Hazards Arising from the Chemical</u>	No information available.
Hazardous Combustion Products	Carbon oxides.
Explosion Data	
Sensitivity to Mechanical Impact	None.
Sensitivity to Static Discharge	Yes.
<u>Protective Equipment and Precautions for Firefighters</u>	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 Use personal protective equipment. Avoid contact with skin, eyes and clothing. Remove all sources of ignition.

Environmental Precautions

Environmental Precautions Prevent further leakage or spillage if safe to do so. Do not allow material to contaminate ground water system. Prevent product from entering drains. Local authorities should be advised if significant spillages cannot be contained. Avoid release to the environment.

Methods and materials for containment and cleaning up

Methods for Containment Dike to collect large liquid spills. Contain and collect spillage with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations (see Section 13).

Methods for Cleaning Up Clean contaminated surface thoroughly.

7. HANDLING AND STORAGE**Precautions for safe handling**

Handling Wear personal protective equipment. Avoid contact with skin, eyes and clothing. Keep away from open flames, hot surfaces and sources of ignition.

Conditions for safe storage, including any incompatibilities

Storage Keep away from open flames, hot surfaces and sources of ignition. Keep containers tightly closed in a dry, cool and well-ventilated place.

Incompatible Products Strong acids. Bases. Oxidizing agents.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION**Control parameters****Exposure Guidelines**

Chemical Name	ACGIH TLV	OSHA PEL	NIOSH IDLH
n-Hexane 110-54-3	TWA: 50 ppm S*	TWA: 500 ppm TWA: 1800 mg/m ³ (vacated) TWA: 50 ppm (vacated) TWA: 180 mg/m ³ (vacated) STEL: 1000 ppm (vacated) STEL: 3600 mg/m ³	IDLH: 1100 ppm TWA: 50 ppm TWA: 180 mg/m ³
Naphtha, petroleum, hydrotreated light 64742-49-0	-	(vacated) TWA: 400 ppm (vacated) TWA: 1600 mg/m ³	IDLH: 1100 ppm Ceiling: 1800 mg/m ³ 15 min TWA: 350 mg/m ³
Cyclohexane 110-82-7	TWA: 100 ppm	TWA: 300 ppm TWA: 1050 mg/m ³ (vacated) TWA: 300 ppm (vacated) TWA: 1050 mg/m ³	IDLH: 1300 ppm TWA: 300 ppm TWA: 1050 mg/m ³

Appropriate engineering controls

Engineering Measures Showers
Eyewash stations
Ventilation systems

Individual protection measures, such as personal protective equipment

Eye/Face Protection Safety glasses with side-shields. If splashes are likely to occur, wear: Tightly fitting safety goggles.

Skin and Body Protection	Wear fire/flammable resistant/retardant clothing.
Respiratory Protection	If exposure limits are exceeded or irritation is experienced, NIOSH/MSHA approved respiratory protection should be worn. Positive-pressure supplied air respirators may be required for high airborne contaminant concentrations. Respiratory protection must be provided in accordance with current local regulations.
Hygiene Measures	When using, do not eat, drink or smoke. Remove and wash contaminated clothing before re-use. Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and immediately after handling the product.

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Physical State	Liquid.	Appearance	Colorless.
Odor	Hydrocarbon-like.	Odor Threshold	No information available.

<u>Property</u>	<u>Values</u>	<u>Remarks/ - Method</u>
pH	No data available	None known
Melting Point/Range	No data available	None known
Boiling Point/Boiling Range	>66 °C	None known
Flash Point	-18 °C	Closed cup
Evaporation rate	No data available	None known
Flammability (solid, gas)	No data available	None known
Flammability Limits in Air		
upper flammability limit	No data available	
lower flammability limit	No data available	
Vapor Pressure	No data available	None known
Vapor Density	No data available	None known
Relative Density	No data available	None known
Specific Gravity	0.67	at 15 °C
Water Solubility	Insoluble in water.	None known
Solubility in other solvents	Soluble in solvents.	None known
Partition coefficient: n-octanol/water	No data available	None known
Autoignition Temperature	No data available	None known
Decomposition Temperature	No data available	None known
Viscosity	0.4 cSt @ 40°C	None known

Flammable Properties Highly flammable.

Explosive Properties No data available

Oxidizing Properties No data available

Other information

VOC Content (%) No data available

10. STABILITY AND REACTIVITY

<u>Reactivity</u>	Not reactive under normal conditions.
<u>Chemical stability</u>	Stable under recommended storage conditions.
<u>Possibility of hazardous reactions</u>	None under normal processing.
<u>Hazardous Polymerization</u>	Hazardous polymerization does not occur.
<u>Conditions to avoid</u>	Ignitions sources - heat, sparks and open flames.
<u>Incompatible materials</u>	Strong acids. Bases. Oxidizing agents.
<u>Hazardous decomposition products</u>	Carbon oxides.

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Product Information

Inhalation

May cause drowsiness and dizziness based on components. May cause irritation of respiratory tract. May cause central nervous system depression with nausea, headache, dizziness, vomiting, and incoordination.

Eye Contact

Contact with eyes may cause irritation.

Skin Contact

Irritating to skin. Prolonged skin contact may defat the skin and produce dermatitis.

Ingestion

Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea. Potential for aspiration if swallowed. Aspiration may cause pulmonary edema and pneumonitis. Causes central nervous system depression.

Numerical measures of toxicity - Product

The following values are calculated based on chapter 3.1 of the GHS document:

LD50 Oral >5000 mg/kg; (ATE Mix)

LD50 Dermal >2000 mg/kg; (ATE Mix)

Inhalation

Vapor >20 mg/L; (ATE Mix)

Chemical Name	LD50 Oral	LD50 Dermal	LC50 Inhalation
n-Hexane	15000 mg/L (Rat)	= 2000 mg/kg (Rabbit)	= 48000 ppm (Rat) 4 h
Naphtha, petroleum, hydrotreated light	> 5000 mg/kg (Rat)	> 3160 mg/kg (Rabbit)	= 73680 ppm (Rat) 4 h
Cyclohexane	= 12705 mg/kg (Rat)	> 2000 mg/kg (Rabbit)	= 13.9 mg/L (Rat) 4 h

Symptoms related to the physical, chemical and toxicological characteristics

Symptoms

Repeated and prolonged overexposure to n-hexane has been associated with peripheral nerve tissue damage. Adverse effects include numbness, tingling, pain, and loss of muscle control in the extremities, disorientation, impaired vision and reflexes, decline in motor function and paralysis.

Delayed and immediate effects and also chronic effects from short and long term exposure

Respiratory or Skin Sensitization No information available.

Germ Cell Mutagenicity No information available.

Carcinogenicity The table below indicates whether each agency has listed any ingredient as a carcinogen.

Chemical Name	ACGIH	IARC	NTP	OSHA
Naphtha, petroleum, hydrotreated light		Group 3		

IARC: (International Agency for Research on Cancer)

Group 3 - Not Classifiable as to its Carcinogenicity to Humans

Reproductive Toxicity

In animal studies, adverse reproductive effect(s) include: Hexane is considered a reproductive hazard. Decreased sperm count, Degenerative changes in the testicles.

STOT - single exposure

May cause drowsiness or dizziness.

STOT - repeated exposure

May cause damage to organs through prolonged or repeated exposure: See listed target organs below.

Chronic Toxicity

Repeated and prolonged overexposure to n-hexane has been associated with peripheral nerve tissue damage. Adverse effects include numbness, tingling, pain, and loss of muscle control in the extremities, disorientation, impaired vision and reflexes, decline in motor function and paralysis.

Target Organ Effects

Liver. Kidney. Respiratory system. Central nervous system (CNS). Cardiovascular system. Peripheral Nervous System (PNS).

Neurological Effects

Intentional misuse by deliberately concentrating and inhaling contents may be harmful or fatal. Repeated or prolonged overexposure to solvents may cause permanent damage to the nervous system.

Aspiration Hazard May be fatal if swallowed and enters airways.

12. ECOLOGICAL INFORMATION

Ecotoxicity

Toxic to aquatic life with long lasting effects.

Chemical Name	Toxicity to Algae	Toxicity to Fish	Toxicity to Microorganisms	Daphnia Magna (Water Flea)
n-Hexane 110-54-3		LC50 96 h: 2.1 - 2.98 mg/L flow-through (Pimephales promelas)		EC50 24 h: > 1000 mg/L (Daphnia magna)
Naphtha, petroleum, hydrotreated light 64742-49-0		LC50 96 h: = 258 mg/L static (Salmo gairdneri)		EC50 48 h: < 0.26 mg/L Static (Daphnia magna) LC50 96 h: = 2.6 mg/L (Chaetogammarus marinus) EC50 24 h: = 36 mg/L (Daphnia magna)
Cyclohexane 110-82-7	EC50 72 h: > 500 mg/L (Desmodesmus subspicatus)	LC50 96 h: 23.03 - 42.07 mg/L static (Pimephales promelas) LC50 96 h: 24.99 - 44.69 mg/L static (Lepomis macrochirus) LC50 96 h: 3.96 - 5.18 mg/L flow-through (Pimephales promelas) LC50 96 h: 48.87 - 68.76 mg/L static (Poecilia reticulata)	EC50 = 85.5 mg/L 5 min EC50 = 93 mg/L 10 min	EC50 24 h: > 400 mg/L (Daphnia magna)

Persistence and Degradability No information available.

Bioaccumulation No information available.

Chemical Name	Log Pow
Cyclohexane	3.44

Mobility No information available.

Other Adverse Effects No information available.

13. DISPOSAL CONSIDERATIONS

Waste Disposal Methods This material, as supplied, is a hazardous waste according to federal regulations (40 CFR 261). Dispose of in accordance with federal, state, and local regulations.

Contaminated Packaging Do not re-use empty containers.

US EPA Waste Number D001

Chemical Name	RCRA	RCRA - Basis for Listing	RCRA - D Series Wastes	RCRA - U Series Wastes
Cyclohexane - 110-82-7				U056

14. TRANSPORT INFORMATION

Note: The information provided below may not apply to all shipping situations. Consult appropriate Dangerous Goods Regulations for additional requirements and mode-specific, material-specific, or quantity-specific shipping requirements.

DOT

UN-Number UN1208
Proper shipping name Hexanes
Hazard Class 3
Packing Group II
Reportable Quantity (RQ) Hexane: RQ kg= 3783.33, Cyclohexane: RQ kg= 22700.00

Description UN1208, Hexanes, 3, II, RQ
Emergency Response Guide Number 128

TDG

UN-Number UN1208
Proper Shipping Name Hexanes
Hazard Class 3
Packing Group II
Description UN1208, Hexanes, 3, II, Marine Pollutant

MEX

UN-Number UN1208
Proper Shipping Name Hexanes
Hazard Class 3
Packing Group II
Description UN1208, Hexanes, 3, II

IATA

UN-Number UN1208
Proper Shipping Name Hexanes
Hazard Class 3
Packing Group II
ERG Code 3H
Description UN1208, Hexanes, 3, II

IMDG/IMO

UN-Number UN1208
Proper Shipping Name Hexanes
Hazard Class 3
Packing Group II
EmS No. F-E, S-D
Marine Pollutant This mixture meets the IMDG criteria for being a marine pollutant.
Description UN1208, Hexanes, 3, II, (-18°C c.c.), Marine Pollutant

15. REGULATORY INFORMATION

International Regulations

Ozone depleting substances Not applicable
Persistent Organic Pollutants Not applicable
Hazardous Waste

Chemical Name	Basel Convention (Hazardous Wastes)
n-Hexane	Y42

The Rotterdam Convention (Prior Informed Consent) Not applicable

International Convention for the Prevention of Pollution from Ships (MARPOL) Not applicable

International Inventories

TSCA Complies
DSL Not determined
EINECS Not determined
ELINCS Not determined
ENCS Not determined
IECSC Not determined
KECL Not determined
PICCS Not determined
AICS Not determined

Legend

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory

DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List

EINECS/ELINCS - European Inventory of Existing Commercial Chemical Substances/EU List of Notified Chemical Substances

ENCS - Japan Existing and New Chemical Substances
IECSC - China Inventory of Existing Chemical Substances
KECL - Korean Existing and Evaluated Chemical Substances
PICCS - Philippines Inventory of Chemicals and Chemical Substances
AICS - Australian Inventory of Chemical Substances

U.S. Federal Regulations

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product contains a chemical or chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372:

Chemical Name	CAS-No	Weight %	SARA 313 - Threshold Values %
n-Hexane	110-54-3	40-60	1.0
Cyclohexane	110-82-7	<2	1.0

SARA 311/312 Hazard Categories

Acute Health Hazard	Yes
Chronic Health Hazard	Yes
Fire Hazard	Yes
Sudden Release of Pressure Hazard	No
Reactive Hazard	No

Clean Water Act

Chemical Name	CWA - Reportable Quantities	CWA - Toxic Pollutants	CWA - Priority Pollutants	CWA - Hazardous Substances
Cyclohexane	1000 lb			X

CERCLA

Chemical Name	Hazardous Substances RQs	Extremely Hazardous Substances RQs	RQ
n-Hexane	5000 lb		RQ 5000 lb final RQ RQ 2270 kg final RQ
Cyclohexane	1000 lb		RQ 1000 lb final RQ RQ 454 kg final RQ

U.S. State Regulations

California Proposition 65

This product does not contain any Proposition 65 chemicals.

U.S. State Right-to-Know Regulations

This product does not contain any substances regulated by state right-to-know regulations.

Chemical Name	New Jersey	Massachusetts	Pennsylvania	Illinois	Rhode Island
n-Hexane	X	X	X	X	X
Methylcyclopentane	X	X	X		X
Naphtha, petroleum, hydrotreated light	X	X	X		
Cyclohexane	X	X	X		X

U.S. EPA Label Information

EPA Pesticide Registration Number Not applicable

16. OTHER INFORMATION

NFPA Health Hazard 2 Flammability 3 Instability 0 Physical and Chemical Hazards -

HMIS Health Hazard 2* Flammability 3 Physical Hazard 0 Personal Protection X

Prepared By Product Stewardship

	23 British American Blvd.
	Latham, NY 12110
	1-800-572-6501
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General Disclaimer

The information provided on this SDS is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guide for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered as a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other material or in any process, unless specified in the text.

End of Safety Data Sheet