

213-4 95% n-HEXANE NON SPECTRO

Version 1

Revision Date 07/29/2009

Print Date 04/28/2011

SECTION 1. PRODUCT AND COMPANY IDENTIFICATION

Product name : Hexane (211, 212, 213, 214, 215, 216, 217, 218, 219)
MSDS Number : 000000011372
Product Use Description : Solvent

Company : Honeywell International Inc.
1953 South Harvey Street
Muskegon, MI 49442

For more information call : 1-800-368-0050
(Monday-Friday, 9:00am-5:00pm)

In case of emergency call : Medical: 1-800-498-5701
: Transportation: 1-800-424-9300 or +1-703-527-3887
: (24 hours/day, 7 days/week)

SECTION 2. HAZARDS IDENTIFICATION

Emergency Overview

Form : liquid, clear
Color : colourless
Odor : mild hydrocarbon-like

Hazard Summary : Extremely flammable. In use, may form flammable/explosive vapour-air mixture. Harmful: danger of serious damage to health by prolonged exposure through inhalation. Aspiration hazard if swallowed - can enter lungs and cause damage. Irritating to eyes, respiratory system and skin. Contains a peripheral neurotoxin. Signs/symptoms include muscle weakness and a numbing or tingling sensation in the arms, legs or feet. May cause irritation of the gastrointestinal tract. Repeated exposure may cause skin dryness or cracking. This product may cause adverse reproductive effects. Possible risk of impaired fertility.

Potential Health Effects

Skin : Irritating to skin.
May be harmful if absorbed through skin.
May cause systemic poisoning with symptoms paralleling those of inhalation.

213-4 95% n-HEXANE NON SPECTRO

Version 1

Revision Date 07/29/2009

Print Date 04/28/2011

	<p>Prolonged or repeated skin contact with liquid may cause defatting resulting in drying, redness and possible blistering.</p>
Eyes	<p>: Irritating to eyes. Causes itching, burning, redness and tearing. Causes blurred vision. May cause corneal injury.</p>
Ingestion	<p>: Aspiration hazard if swallowed - can enter lungs and cause damage. Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhoea. May cause systemic poisoning with symptoms paralleling those of inhalation.</p>
Inhalation	<p>: Harmful: danger of serious damage to health by prolonged exposure through inhalation. Causes respiratory tract irritation. Causes headache, drowsiness or other effects to the central nervous system. Contains a peripheral neurotoxin. Signs/symptoms include muscle weakness and a numbing or tingling sensation in the arms, legs or feet. Vapours may cause drowsiness and dizziness. Inhalation of high vapour concentrations can cause CNS-depression and narcosis.</p>
Chronic Exposure	<p>: Repeated and prolonged exposure to solvents may cause brain and nervous system damage. Contains a peripheral neurotoxin. Signs/symptoms include muscle weakness and a numbing or tingling sensation in the arms, legs or feet. Prolonged or repeated skin contact with liquid may cause defatting resulting in drying, redness and possible blistering. This product may cause adverse reproductive effects. Possible risk of impaired fertility.</p>
Aggravated Medical Condition	<p>: Eye disorders Respiratory disorders Liver disorders Kidney disorders Neurological disorders Skin disorders</p>
Target Organs	<p>: Eyes Skin Respiratory system Central nervous system Peripheral nervous system testes</p>

213-4 95% n-HEXANE NON SPECTRO

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Carcinogenicity

No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP, IARC, or OSHA.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Component	CAS-No.	Weight %
n-Hexane	110-54-3	>60.00
HEXANE, ISOMERS OTHER THAN N-HEXANE	-	<40.00

SECTION 4. FIRST AID MEASURES

- Inhalation : Call a physician immediately. Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Use oxygen as required, provided a qualified operator is present.
- Skin contact : Wash off immediately with plenty of water for at least 15 minutes. Take off contaminated clothing and shoes immediately. Wash contaminated clothing before re-use. Call a physician.
- Eye contact : Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Call a physician.
- Ingestion : Do not induce vomiting without medical advice. If a person vomits when lying on his back, place him in the recovery position. Call a physician immediately. Never give anything by mouth to an unconscious person.

Notes to physician

- Treatment : Treat symptomatically.

SECTION 5. FIRE-FIGHTING MEASURES

- Flash point : -26 °C (-15 °F)
closed cup
- Ignition temperature : 225 °C (437 °F)

213-4 95% n-HEXANE NON SPECTRO

Version 1

Revision Date 07/29/2009

Print Date 04/28/2011

- Lower explosion limit : 1.2 %(V)
- Upper explosion limit : 7.7 %(V)
- Suitable extinguishing media : Foam
 Carbon dioxide (CO2)
 Dry chemical
 Cool closed containers exposed to fire with water spray.
- Extinguishing media which shall not be used for safety reasons : Do not use a solid water stream as it may scatter and spread fire.
- Specific hazards during fire fighting : Extremely flammable.
 Vapours may form explosive mixtures with air.
 Vapours are heavier than air and may spread along floors.
 Vapors may travel to areas away from work site before igniting/flashing back to vapor source.
 In case of fire hazardous decomposition products may be produced such as:
 Carbon monoxide
 Carbon dioxide (CO2)
- Special protective equipment for fire-fighters : Wear self-contained breathing apparatus and protective suit.

SECTION 6. ACCIDENTAL RELEASE MEASURES

- Personal precautions : Wear personal protective equipment. Unprotected persons must be kept away.
 Immediately evacuate personnel to safe areas.
 Keep people away from and upwind of spill/leak.
 Ensure adequate ventilation.
 Remove all sources of ignition.
 Do not swallow.
 Do not breathe vapours or spray mist.
 Avoid contact with skin, eyes and clothing.
- Environmental precautions : Prevent further leakage or spillage if safe to do so.
 Discharge into the environment must be avoided.
 Do not flush into surface water or sanitary sewer system.
 Prevent product from entering drains.
 Collect contaminated fire extinguishing water separately. This must not be discharged into drains.
- Methods for cleaning up : Ventilate the area.
 No sparking tools should be used.
 Use explosion-proof equipment.
 Contain and collect spillage with non-combustible absorbent

213-4 95% n-HEXANE NON SPECTRO

Version 1

Revision Date 07/29/2009

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materials, e.g. sand, earth, vermiculite, diatomaceous earth and place in container for disposal according to local regulations (see section 13).

SECTION 7. HANDLING AND STORAGE

Handling

Handling : Wear personal protective equipment.
 Use only in well-ventilated areas.
 Keep container tightly closed.
 Do not smoke.
 Do not swallow.
 Do not breathe vapours or spray mist.
 Avoid contact with skin, eyes and clothing.

Advice on protection against fire and explosion : Keep away from fire, sparks and heated surfaces.
 Take precautionary measures against static discharges.
 Ensure all equipment is electrically grounded before beginning transfer operations.
 Use explosion-proof equipment.
 Keep product and empty container away from heat and sources of ignition.
 No sparking tools should be used.
 No smoking.

Storage

Requirements for storage areas and containers : Store in area designed for storage of flammable liquids.
 Protect from physical damage.
 Keep containers tightly closed in a dry, cool and well-ventilated place.
 Containers which are opened must be carefully resealed and kept upright to prevent leakage.
 Keep away from heat and sources of ignition.
 Keep away from direct sunlight.
 Store away from incompatible substances.
 Container hazardous when empty.
 Do not pressurize, cut, weld, braze, solder, drill, grind or expose containers to heat or sources of ignition.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Protective measures : Ensure that eyewash stations and safety showers are close to the workstation location.

213-4 95% n-HEXANE NON SPECTRO

Version 1

Revision Date 07/29/2009

Print Date 04/28/2011

- Engineering measures : Use with local exhaust ventilation.
Prevent vapor buildup by providing adequate ventilation during and after use.

- Eye protection : Do not wear contact lenses.
Wear as appropriate:
Safety glasses with side-shields
If splashes are likely to occur, wear:
Goggles or face shield, giving complete protection to eyes

- Hand protection : Solvent-resistant gloves
Gloves must be inspected prior to use.
Replace when worn.

- Skin and body protection : Wear as appropriate:
Solvent-resistant apron
Flame retardant antistatic protective clothing
If splashes are likely to occur, wear:
Protective suit

- Respiratory protection : In case of insufficient ventilation wear suitable respiratory equipment.
For rescue and maintenance work in storage tanks use self-contained breathing apparatus.
Use NIOSH approved respiratory protection.

- Hygiene measures : When using, do not eat, drink or smoke.
Wash hands and face before breaks and immediately after handling the product.
Keep working clothes separately.
Remove and wash contaminated clothing before re-use.
Do not swallow.
Do not breathe vapours or spray mist.
Avoid contact with skin, eyes and clothing.

Exposure Guidelines

n-Hexane	110-54-3	ACGIH	TWA	50 ppm
		Skin designation: Can be absorbed through the skin.		
		NIOSH	REL	50 ppm 180 mg/m3
		US CA OEL	TWA PEL	50 ppm 180 mg/m3
		Skin designation: Can be absorbed through the skin.		
		OSHA Z1	PEL	500 ppm 1,800 mg/m3

213-4 95% n-HEXANE NON SPECTRO

Version 1

Revision Date 07/29/2009

Print Date 04/28/2011

HEXANE, ISOMERS OTHER THAN N- HEXANE	OSHA Z1A	TWA	50 ppm	180 mg/m3
	NIOSH	REL	100 ppm	350 mg/m3
	NIOSH	CEILING	510 ppm	1,800 mg/m3
	ACGIH	TLV		500 ppm
	ACGIH	STEL		1,000 ppm
	OSHA Z1A	TWA	500 ppm	1,800 mg/m3
	OSHA Z1A	STEL	1,000 ppm	3,600 mg/m3
	US CA OEL	TWA	500 ppm	1,800 mg/m3
	US CA OEL	STEL	1,000 ppm	3,600 mg/m3

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Form	: liquid, clear
Color	: colourless
Odor	: mild hydrocarbon-like
pH	: not applicable
Melting point/range	: -95 °C (-139 °F)
Boiling point/boiling range	: 68.7 °C (155.7 °F)
Vapor pressure	: 165.32 hPa at 20 °C (68 °F)
Relative vapour density	: 3 (Air = 1.0)
Density	: 0.659 - 0.673 g/cm3 at 20 °C (68 °F)
Water solubility	: negligible

213-4 95% n-HEXANE NON SPECTRO

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SECTION 10. STABILITY AND REACTIVITY

- Conditions to avoid : Heat, flames and sparks.
Keep away from direct sunlight.
- Materials to avoid : Oxidizing agents
Halogens
Oxygen
May attack many plastics, rubbers and coatings.
- Hazardous decomposition products : In case of fire hazardous decomposition products may be produced such as:
Carbon monoxide
Carbon dioxide (CO₂)
- Hazardous reactions : Hazardous polymerisation does not occur.
Stable under recommended storage conditions.

SECTION 11. TOXICOLOGICAL INFORMATION

- Acute oral toxicity : LD50 rat
Dose: 25 g/kg
Test substance: n-Hexane
- Acute dermal toxicity : LD50 rabbit
Dose: 3,000 mg/kg
Test substance: n-Hexane
- Acute inhalation toxicity : LC50 rat
Dose: 48000 ppm
Exposure time: 4 h
Test substance: n-Hexane
- Skin irritation : rabbit
irritating
Test substance:n-Hexane
- Eye irritation : rabbit
irritating
Test substance: n-Hexane
- Repeated dose toxicity : Inhalation rat central nervous system effects, structural abnormalities in sperm, 5,000 ppm
Exposure time: 8 d
Test substance: n-Hexane

213-4 95% n-HEXANE NON SPECTRO

Version 1

Revision Date 07/29/2009

Print Date 04/28/2011

- Repeated dose toxicity : Oral rat central nervous system effects, testicular effects, No observed adverse effect level
1,140 mg/kg
Exposure time: 90 d
Test substance: n-Hexane
- Repeated dose toxicity : Oral rat central nervous system effects, testicular effects, Lowest observed adverse effect level
4,000 mg/kg
Exposure time: 90 d
Test substance: n-Hexane
- Repeated dose toxicity : Inhalation rat Developmental Toxicity, NOAEL (maternal toxicity), 1000 ppm, NOAEL (developmental toxicity), 5,000 ppm
Test substance: n-Hexane
- Genotoxicity in vitro : Test substance: n-Hexane
In vitro tests did not show mutagenic effects
- Genotoxicity in vivo : Test substance: n-Hexane
In vivo tests did not show mutagenic effects

SECTION 12. ECOLOGICAL INFORMATION

- Toxicity to fish : LC50
Species: Oncorhynchus mykiss (rainbow trout)
Dose: 4.14 mg/l
Exposure time: 96 h
Test substance: n-Hexane
- Toxicity to fish : LC50
Species: Pimephales promelas (fathead minnow)
Dose: 2.5 mg/l
Exposure time: 96 h
Test substance: n-Hexane
- Toxicity to fish : LC50
Species: Lepomis macrochirus (Bluegill sunfish)
Dose: 4.12 mg/l
Exposure time: 96 h
Test substance: n-Hexane
- Toxicity to daphnia and other aquatic invertebrates. : LC50
Species: Daphnia magna (Water flea)
Dose: 3.87 mg/l
Exposure time: 96 h

213-4 95% n-HEXANE NON SPECTRO

Version 1

Revision Date 07/29/2009

Print Date 04/28/2011

Test substance: n-Hexane

Additional ecological
information: Toxic to aquatic organisms, may cause long-term adverse
effects in the aquatic environment.
Should not be released into the environment.
SECTION 13. DISPOSAL CONSIDERATIONS

Waste Information: Observe all Federal, State, and Local Environmental regulations.

SECTION 14. TRANSPORT INFORMATION

DOT UN-Number : 1208
 Proper shipping name : Hexanes
 Class : 3
 Packing group : II
 Hazard Label : 3

IATA UN Number : 1208
 Description of the goods : Hexanes
 Class : 3
 Packaging group : II
 Hazard Label : 3
 Packing instruction (cargo : 307
 aircraft)
 Packing instruction : 305
 (passenger aircraft)
 Packing instruction : Y305
 (passenger aircraft)

IMDG Substance No. : UN 1208
 Description of the goods : Hexanes
 Class : 3
 Packaging group : II
 Hazard Label : 3
 EmS Number : F-E
 Marine pollutant : no

SECTION 15. REGULATORY INFORMATION
Inventories

1907/2006 (EU) : This mixture contains only ingredients which have been subject
 to a pre-registration according to Regulation (EC) No.
 1907/2006 (REACH).

213-4 95% n-HEXANE NON SPECTRO

Version 1

Revision Date 07/29/2009

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- US. Toxic Substances Control Act : On TSCA Inventory
- Australia. Industrial Chemical (Notification and Assessment) Act : On the inventory, or in compliance with the inventory
- Canada. Canadian Environmental Protection Act (CEPA). Domestic Substances List (DSL). (Can. Gaz. Part II, Vol. 133) : All components of this product are on the Canadian DSL list.
- Japan. Kashin-Hou Law List : On the inventory, or in compliance with the inventory
- Korea. Toxic Chemical Control Law (TCCL) List : On the inventory, or in compliance with the inventory
- Philippines. The Toxic Substances and Hazardous and Nuclear Waste Control Act : On the inventory, or in compliance with the inventory
- China. Inventory of Existing Chemical Substances : On the inventory, or in compliance with the inventory
- NZIOC - New Zealand : On the inventory, or in compliance with the inventory

National regulatory information

- SARA 313 Components** : n-Hexane 110-54-3
- SARA 311/312 Hazards** : Fire Hazard
 Acute Health Hazard
 Chronic Health Hazard
- CERCLA Reportable Quantity** : 5000 lbs

213-4 95% n-HEXANE NON SPECTRO

Version 1

Revision Date 07/29/2009

Print Date 04/28/2011

California Prop. 65 : WARNING! This product contains a chemical known in the State of California to cause cancer.
 Benzene 71-43-2

: WARNING! This product contains a chemical known in the State of California to cause birth defects or other reproductive harm.
 Benzene 71-43-2

Massachusetts RTK : n-Hexane 110-54-3
 : Benzene 71-43-2

New Jersey RTK : n-Hexane 110-54-3

Pennsylvania RTK : n-Hexane 110-54-3

WHMIS Classification : B2
 D2A
 This product has been classified according to the hazard criteria of the CPR and the MSDS contains all of the information required by the CPR.

SECTION 16. OTHER INFORMATION

	HMIS III	NFPA
Health Hazard	: 1*	1
Flammability	: 3	3
Physical Hazard	: 0	
Instability	:	0

Further information

* - Chronic health hazard