

## Burdick & Jackson

# Material Safety Data Sheet

## Hexane

### 1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

**PRODUCT NAME:** Hexane (60% n-Hexane)

**OTHER/GENERIC NAMES:** Hexanes

**PRODUCT USE:** Solvent

**MANUFACTURER:** Honeywell, Burdick & Jackson  
1953 South Harvey Street  
Muskegon, MI 49442

**FOR MORE INFORMATION CALL:**  
(Monday-Friday, 8:00am-5:00pm Eastern Time)  
1-800-368-0050

**IN CASE OF EMERGENCY CALL:**  
(24 Hours/Day, 7 Days/Week)  
1-800-498-5701 (medical emergencies)  
602-365-4980 (Honeywell - International)  
**For 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>
n-Hexane	110-54-3	60-65
Other Hexanes	Not applicable	35-40

Trace impurities and additional material names not listed above may also appear in Section 15 toward 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:** Extremely flammable liquid and vapor. Vapor may cause a flash fire. Keep away from all sources of ignition. Exposure may cause severe skin, eye and respiratory tract irritation. Inhalation in high concentrations may result in central nervous system effects.

#### POTENTIAL HEALTH HAZARDS

**SKIN:** Irritant. Contact may cause redness, itching and burning. Prolonged contact can cause dermatitis through defatting of the skin. May be absorbed through the skin with possible systemic effects.

**EYES:** Irritant. Contact may cause stinging, watering, redness and swelling.

**INHALATION:** Causes respiratory tract irritation. High exposures when repeated or prolonged can cause lightheadedness, giddiness, headache, extremity numbness and result in central nervous system depression.

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**INGESTION:** Ingestion can cause same effects as inhalation plus gastrointestinal tract discomfort. Aspiration into the lungs can cause chemical pneumonia and lung damage.

**DELAYED EFFECTS:** Effects of CNS depression may linger for hours after exposure. Peripheral neuropathies can occur with long-term exposure. N-hexane can cause reproductive damage.

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>
No ingredients listed in this section.			

#### 4. FIRST AID MEASURES

**SKIN:** Wash with soap and water and flush with water for at least 15 minutes while removing contaminated clothing and shoes. Get medical attention for irritation or any other symptom. Launder contaminated clothing and clean shoes before reuse.

**EYES:** Immediately flush eyes with plenty of water for at least 15 minutes. Get immediate medical attention.

**INHALATION:** Remove from exposure area to fresh air. If breathing is difficult, give oxygen provided a qualified operator is available. If breathing has stopped, apply artificial respiration. Get immediate medical attention.

**INGESTION:** **Aspiration hazard.** If conscious, rinse mouth with water. Do not induce vomiting unless directed to do so by medical personnel. Get immediate medical attention.

**ADVICE TO PHYSICIAN:** Treat supportively and symptomatically.

#### 5. FIRE FIGHTING MEASURES

##### FLAMMABLE PROPERTIES

**FLASH POINT:** -15° F (-26° C)  
**FLASH POINT METHOD:** Tag Closed Cup (ASTM D-56)  
**AUTOIGNITION TEMPERATURE:** 437° F (225° C)  
**UPPER FLAMMABLE LIMIT (volume % in air):** 7.7%  
**LOWER FLAMMABLE LIMIT (volume % in air):** 1.2%  
**FLAME PROPAGATION RATE (solids):** Not Applicable  
**OSHA FLAMMABILITY CLASS:** Flammable liquid

##### **EXTINGUISHING MEDIA:**

Use carbon dioxide, dry chemical, regular foam. Use water spray to cool containers or knock down vapors.

##### **UNUSUAL FIRE AND EXPLOSION HAZARDS:**

Material is extremely flammable and may be ignited by any source of ignition. Vapor and air mixtures may be flammable and explosive indoors, outdoors and in confined spaces. Vapors are heavier than air and may travel large distances to a source of ignition resulting in flashback, explosion and fire. Containers can pressurize and rupture during fire conditions.

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#### **SPECIAL FIRE FIGHTING PRECAUTIONS/INSTRUCTIONS:**

Wear full firefighting gear. Wear NIOSH approved self-contained breathing apparatus (SCBA) with a full facepiece operated in pressure-demand or positive-pressure mode. Keep containers cool with water spray. Water spray may be useful in dispersing and minimizing vapors. Use non-sparking tools and equipment. Do not release runoff from fire control methods to sewers or waterways.

#### **6. ACCIDENTAL RELEASE MEASURES**

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

Eliminate sources of ignition. Isolate the spill area. Use non-sparking tools and equipment. Stop leak in a safe and practical manner. If leak cannot be stopped easily and safely, advise trained emergency response personnel of the situation. Contain and recover liquid when possible using nonsparking tools. Absorb small spills with an inert noncombustible material and place in an approved chemical waste container. For large spills, dike spill area with inert material and transfer into approved chemical waste containers. Do not allow to enter into drains or waterways or to collect in low areas.

**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.)

Use with adequate ventilation. Open containers slowly. Liquid and vapor are flammable. Keep away from all sources of ignition including potential sources of static electricity. Ground and bond all transfer and handling equipment. Keep container closed when not in use. Avoid contact with skin, eyes and clothing. Do not breathe vapors.

#### **STORAGE RECOMMENDATIONS:**

Store in a cool dry well ventilated area. Store in an area designed for storage of flammable liquids preferably outdoors ( OSHA 29 CFR 1910.106). Do not store near sources of ignition, temperature extremes, direct sunlight and incompatible substances. Protect container from physical damage. Keep containers tightly closed. Empty containers may contain product residue and/or flammable vapors. Label warnings apply to empty containers that have not been cleaned.

#### **8. EXPOSURE CONTROLS/PERSONAL PROTECTION**

##### **ENGINEERING CONTROLS:**

Ensure adequate general workplace ventilation is present. In addition provide enclosed systems or local exhaust ventilation designed to prevent concentrations in air from reaching flammable and or explosive levels in air and to control employee exposures below recommended permissible exposure levels.

##### **PERSONAL PROTECTIVE EQUIPMENT**

##### **SKIN PROTECTION:**

Wear protective gloves, boots and clothing suitable to prevent skin contact. Nitrile, polyvinyl alcohol (PVA) and neoprene are suitable materials of construction. Inspect for signs of degradation after each use. Replace as needed.

##### **EYE PROTECTION:**

Wear safety glasses or chemical safety goggles, per OSHA eye and face protection regulations (29 CFR 1910.133). Contact lenses are not eye protective devices. Appropriate eye protection must be worn instead of, or in conjunction with contact lenses.

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#### RESPIRATORY PROTECTION:

Not required for properly ventilated areas. If there is potential for inhalation of vapor or mist, use an appropriate NIOSH approved respirator. Warning! Air-purifying respirators do not protect workers in oxygen-deficient atmospheres.

The respirator must be selected based on contamination levels and use conditions found in the workplace. Use conditions must not exceed the working limits of the respirator. The respirator must be approved by the National Institute for Occupational Safety and Health (NIOSH) and used in accordance with Occupational Safety and Health Administration (OSHA) 29 CFR 1910.134.

#### ADDITIONAL RECOMMENDATIONS:

Explosion proof rated equipment and devices may be required in processing and handling areas. Make emergency eyewash stations and washing facilities available in work area. Separate contaminated work clothes from street clothes. Launder before reuse. Remove this material from your shoes and clean personal protective equipment. Never eat, drink, or smoke in work areas. Practice good personal hygiene after using this material.

#### EXPOSURE GUIDELINES

<u>INGREDIENT NAME</u>	<u>ACGIH TLV</u>	<u>OSHA Z-1 PEL</u>	<u>OTHER LIMIT</u>
Hexane	50 ppm (skin) TWA 8-hr. exposure limit.	500 ppm.	NIOSH REL: 50 ppm 10 hr day/40 hr week. NIOSH IDLH: 1100 ppm.

#### OTHER EXPOSURE LIMITS FOR POTENTIAL DECOMPOSITION PRODUCTS:

None

### 9. PHYSICAL AND CHEMICAL PROPERTIES

<b>APPEARANCE:</b>	Colorless
<b>PHYSICAL STATE:</b>	Liquid
<b>MOLECULAR WEIGHT:</b>	Not applicable
<b>CHEMICAL FORMULA:</b>	Mixture
<b>ODOR:</b>	Mild odor. Threshold: Not listed
<b>SPECIFIC GRAVITY (water = 1.0):</b>	~ 0.678 @ 60° F (15.6° C).
<b>SOLUBILITY IN WATER (weight %):</b>	Negligible
<b>pH:</b>	Not Applicable
<b>BOILING POINT:</b>	145-157° F (62-69° C)
<b>MELTING POINT:</b>	Not applicable
<b>VAPOR PRESSURE:</b>	~ 5.6 psi @ 100° F (38° C )
<b>VAPOR DENSITY (air = 1.0):</b>	~ 3.0
<b>EVAPORATION RATE:</b>	~ 8.10
<b>% VOLATILES:</b>	~ 100
<b>FLASH POINT:</b>	~ -15° F (-26° C) (TCC, ASTM D-56)
	(Flash point method and additional flammability data are found in Section 5.)
	<b>COMPARED TO:</b> Butyl Acetate = 1

### 10. STABILITY AND REACTIVITY

#### NORMALLY STABLE? (CONDITIONS TO AVOID):

Stable in closed containers at normal storage and handling conditions of 68°F (20°C) and 760 mm Hg (1 atm). Avoid all sources of ignition.

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**INCOMPATIBILITIES:**

Oxidizers, halogens, chromates, perchlorates, peroxides, oxygen

**CONDITIONS TO AVOID:**

Heat, sparks, flame, static electricity, incompatible materials

**HAZARDOUS DECOMPOSITION PRODUCTS:**

Oxides of carbon and flammable and toxic materials

**HAZARDOUS POLYMERIZATION:**

Not expected to occur.

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**11. TOXICOLOGICAL INFORMATION**

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**IMMEDIATE (ACUTE) EFFECTS:**n-Hexane

Dermal LD<sub>50</sub> (rabbit): > 2,000 mg/kg

Oral LD<sub>50</sub> (rat): 28,700 mg/kg.

Inhalation LC<sub>50</sub> (rat): > 3,367 ppm (4 -hr.)

**DELAYED (SUBCHRONIC AND CHRONIC) EFFECTS:**

Prolonged exposure to high concentrations of n-hexane (> 1000 ppm) has resulted in decreased sperm count and degenerative changes in the testes in rats but not those of mice.

Excessive exposure to n-hexane can result in peripheral neuropathies. The onset of symptoms may be delayed for several months to a year after the beginning of exposure. The neurotoxic properties of n-Hexane are potentiated by exposure to methyl ethyl ketone and methyl isobutyl ketone.

**OTHER DATA:**

A mixture of hexane isomers, free of n-hexane, did not produce neurotoxic effects in rats exposed to 500 ppm for six months.

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#### 12. ECOLOGICAL INFORMATION

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96h LC<sub>0</sub> (young Coho salmon) = 100 mg/L

24 h LC<sub>50</sub> (Goldfish) = 4 mg/l

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#### 13. DISPOSAL CONSIDERATIONS

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##### RCRA

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

If yes, the RCRA ID number (USEPA Hazardous Waste Code) is:      D001

##### OTHER DISPOSAL CONSIDERATIONS:

Whatever cannot be saved for recovery or recycling should be handled as hazardous waste and sent to a RCRA approved incinerator or RCRA approved waste facility. Dispose of container and unused contents in accordance with federal, state and local requirements.

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 RCA classification and the proper disposal

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#### 14. TRANSPORT INFORMATION

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**Proper DOT Shipping Description:** Hexanes, 3, UN 1208, II.

**Reportable Quantity (RQ):** Hexane = 5000 lbs (2270 kg).

**Label(s) Required:** Class 3, Flammable Liquid.

**Emergency Response Guidebook (2000 Edition):** Guide No. 128.

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

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#### 15. REGULATORY INFORMATION

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##### TOXIC SUBSTANCES CONTROL ACT (TSCA)

**TSCA INVENTORY STATUS:**      The components of this product are listed on TSCA inventory.

**OTHER TSCA ISSUES:**      None.

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#### 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>
Hexane	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, Chronic, Fire

#### **SARA 313 TOXIC CHEMICALS:**

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

<u>INGREDIENT NAME</u>	<u>COMMENT</u>
n-Hexane [110-54-3]	de minimis Concentration is 1.0%

#### STATE RIGHT-TO-KNOW

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

<u>INGREDIENT NAME</u>	<u>WEIGHT %</u>	<u>COMMENT</u>
No ingredients listed in this section.		

#### **ADDITIONAL REGULATORY INFORMATION:**

None

#### **WHMIS CLASSIFICATION (CANADA):**

Class B, Division 2 Flammable liquid  
Class D, Division 2B –Materials causing other toxic effects

#### **FOREIGN INVENTORY STATUS:**

The components of the product are listed on the following inventories:

- Australia (AICS)
- Canada (DSL)
- China (IECSC)
- European Union (EINECS)
- Japanese (ENCS)
- Korea. (KECI)
- Philippine (PICCS)
- New Zealand

#### **16. OTHER INFORMATION**

**CURRENT ISSUE DATE:** August 2005  
**PREVIOUS ISSUE DATE:** June 2005

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

New MSDS

**OTHER INFORMATION:**    **NFPA Classification**

Health: 1

Flammability: 3

Instability: 0