



MATERIAL SAFETY DATA SHEET

SECTION 1 PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME	UNISOURCE® ISOHEXANE AHS	
SYNONYM	Iso-Hexane	
CHEMICAL FAMILY	Hydrocarbon Mixture	
COMPANY IDENTIFICATION	UniSource Energy, Inc. 245 W. Roosevelt Road, Building 14, Suite 145 West Chicago, IL 60185 Phone: 630-231-7990 Fax: 630-231-8036	
EMERGENCY TELEPHONE NUMBERS	UniSource Energy, Inc. 1-800-444-5510	CHEMTREC 1-800-424-9300

SECTION 2 COMPOSITION / INFORMATION ON INGREDIENTS

CAS Number	Material or Component	% By Weight
107-83-5	2-METHYLPENTANE (ISOHEXANE)	90 - 100
96-14-0	3-METHYLPENTANE	
75-83-2	2,2-DIMETHYLBUTANE	
79-29-8	2,3-DIMETHYLBUTANE	
109-66-0	n-PENTANE	0 - 10
110-54-3	n-HEXANE	0 - 5

SECTION 3 HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

DANGER: EXTREMELY FLAMMABLE!
 VAPOR MAY CAUSE FLASH FIRE.
 MAY BE HARMFUL IF INHALED.
 MAY CAUSE RESPIRATORY TRACT, EYE AND SKIN IRRITATION.
 MAY BE HARMFUL OR FATAL IF SWALLOWED.
 ASPIRATION HAZARD IF SWALLOWED – CAN ENTER LUNGS AND CAUSE DAMAGE.
 MAY CAUSE DAMAGE TO THE FOLLOWING ORGANS: LUNGS, CENTRAL NERVOUS SYSTEM, DIGESTIVE SYSTEM, RESPIRATORY TRACT, SKIN, EYES.
 MAY CAUSE WEAKNESS AND NUMBNESS IN EXTREMITIES.

ROUTES OF ENTRY: Absorbed through dermal contact, eye contact, inhalation, ingestion.

POTENTIAL ACUTE HEALTH EFFECTS

Eyes: May cause eye irritation with tearing, redness, stinging, blurred vision.
Skin: May cause skin irritation with inflammation, reddening, itching, scaling or blistering.
Inhalation: Breathing high concentrations can cause respiratory tract irritation, nausea, headaches, drowsiness, dizziness, light-headedness, unconsciousness and other central nervous system effects.
Ingestion: May cause irritation of mouth, throat, and gastrointestinal tract. If swallowed, aspiration into lungs may result in chemical pneumonitis and severe pulmonary injury.

MEDICAL CONDITIONS AGGRAVATED BY OVEREXPOSURE

Repeated exposure to a highly toxic material may produce deterioration of health by an accumulation in one or many human organs.

OVEREXPOSURE/SIGNS/SYMPTOMS

Prolonged or repeated exposure to this product can cause central nervous system effects and irritation to the eyes, skin, and respiratory tract. Frequent skin contact can remove skin oils, resulting in dermatitis.

(See Toxicological Information – Section 11)

**SECTION 4 FIRST AID MEASURES**

EYE CONTACT: Flush thoroughly with water while holding eyelids open. Remove contact lenses, if worn, after initial flushing, and continue flushing for at least 15 minutes. If irritation occurs, get immediate medical attention.

SKIN CONTACT: Wash contact areas immediately with soap and water. Remove contaminated clothing and place in closed container for storage until laundered or discarded. Thoroughly clean contaminated clothing before reuse.

INHALATION: Allow the victim to rest in a well-ventilated area. Seek immediate medical attention.

INGESTION: DO NOT induce vomiting; aspiration into lungs may cause chemical pneumonia and severe lung damage. If spontaneous vomiting occurs, keep head below hips to prevent aspiration and monitor for breathing difficulty. Seek immediate medical attention.

NOTES TO PHYSICIAN: If ingested, material may be aspirated into the lungs and cause chemical pneumonitis. Treat appropriately.

SECTION 5 FIRE FIGHTING MEASURES

FLAMMABILITY: Extremely flammable

FLASH POINT: -6.7°C (20°F)

FLAMMABLE LIMITS: Not available

PRODUCTS OF COMBUSTION: May produce incomplete combustion products (COx, NOx, SOx).

FIRE HAZARDS IN PRESENCE OF VARIOUS SUBSTANCES

Combustible in presence of open flames, sparks, and heat. Vapors are flammable and may travel across the ground reaching remote ignition sources causing a flashback fire danger.

EXPLOSION HAZARDS IN PRESENCE OF VARIOUS SUBSTANCES

Possible risk of explosion of the product in presence of static discharge or extreme heat. Keep work areas free of hot metal surfaces and other sources of ignition.

EXTINGUISHING MEDIA

Use water fog or spray, foam, dry chemical or carbon dioxide (CO₂) to extinguish flames.

FIRE FIGHTING INSTRUCTIONS

Evacuate area. Prevent runoff from fire control or dilution from entering streams, sewers, or drinking water supply. Use water spray to cool fire exposed surfaces and to protect personnel.

Small Fire: Use DRY chemical powder, halon, and CO₂.

Large Fire: Use water spray, fog or foam. DO NOT use water jet.

PROTECTIVE CLOTHING (FIRE)

Wear MSHA/NIOSH approved self-contained breathing apparatus or equivalent and full protective gear (Bunker gear).

NFPA HAZARD ID

Health: 1 Fire Hazard: 3 Reactivity: 0

HMIS HAZARD ID

Health: 1 Flammability: 3 Physical Hazard : 0

SECTION 6 ACCIDENTAL RELEASE MEASURES**NOTIFICATION PROCEDURES**

U.S. regulations may require reporting releases of this material to the environment which exceed the reportable quantity or oil spills which could reach any waterway including intermittent dry creeks. Report spills to local authorities and/or the National Response Center at (800) 424-8802 as appropriate or required.

PROTECTIVE MEASURES

Avoid contact with spilled material. Warn or evacuate occupants in surrounding area. Eliminate all (potential) sources of ignition in the vicinity of the spill or released vapor. Handling equipment must be grounded to prevent sparking.

SPILL MANAGEMENT

Land Spill: Eliminate all ignition sources (no smoking, flares, sparks or flames in immediate area). Stop leak if it can be done without risk. All equipment used when handling the product must be grounded. Do not touch or walk through spilled material. Prevent entry into waterways, sewers, basements or confined areas. A vapor suppressing foam may be used to reduce vapors. Use clean non-sparking tools to collect absorbed material. Absorb or cover with dry earth, sand or other non-combustible material and transfer to containers.

Water Spill: Stop leak if it can be done without risk. Confine the spill immediately with booms. Warn other vessels. Remove from the surface by skimming or with suitable absorbents. Report spills as required to appropriate authorities. Seek the advice of a specialist before using dispersants.



ENVIRONMENTAL PRECAUTIONS

Large Spills: Contain spill and safely stop the flow, warning personnel to stay away. Eliminate all sources of ignition and ventilate. Dike far ahead of liquid spill for later recovery and disposal. Prevent entry into waterways, sewers, basements or confined areas. Water spray may reduce vapor, but may not prevent ignition in closed spaces. Recover with appropriate pumping equipment or with suitable absorbent.

Small Spills: Absorb with an inert material such as clay or sand. Place in appropriate non-leaking container. Seal tightly for proper disposal.

Note: Local regulations may prescribe or limit action to be taken.

SECTION 7

HANDLING AND STORAGE

HANDLING

Keep away from heat. Keep away from sources of ignition. Ground all equipment containing material. Ground lines and equipment used during transfer to reduce the possibility of static spark-initiated fire or explosion. Use non-sparking tools. Keep away from incompatibles such as oxidizing agents. DO NOT ingest. Do not breathe gas, fumes, vapor, or spray. Do not eat, drink or smoke in areas of use or storage. In case of insufficient ventilation, wear suitable respiratory equipment. If ingested, seek medical advice immediately, showing them the container or the label. Avoid contact with skin and eyes. Use good personal hygiene practices. Wash thoroughly after handling this product.

STORAGE

Combustible materials should be stored in a separate labeled safety storage cabinet or room. Keep away from heat and all possible sources of ignition. Keep container tightly closed and dry. Keep in a cool and well-ventilated area. Ground all equipment containing material. Empty containers may contain material residue; do not reuse without adequate precautions. Do not eat, drink or smoke in areas of use or storage. All efforts should be made to prevent any leaks or spills. Storage tanks containing this product should be engineered to prevent contact with water resources, as this material could contaminate the water resources. Surface spills can reach groundwater through porous soil or cracked surfaces. The storage tanks should be monitored regularly for leaks. Where spills or leaks are possible, a comprehensive response plan should be developed and implemented.

SECTION 8

EXPOSURE CONTROLS / PERSONAL PROTECTION

ENGINEERING CONTROLS

Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapors below their respective threshold limit value. Ensure that eyewash stations and safety showers are proximal to the work-station location.

PERSONAL PROTECTION

Eyes: Safety glasses with side shields.

Body: Flame retardant clothing covering the entire body.

Respiratory: Use a MSHA/NIOSH approved respirator or equivalent at high concentrations.

Hands: Chemical resistant gloves if contact is possible.

Feet: Safety slip-proof shoes in areas where spills or leaks can occur.

PROTECTIVE CLOTHING

Splash goggles, Full suit, Vapor respirator, Boots, Gloves.

A self-contained breathing apparatus should be used to avoid inhalation of the product. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product.

THRESHOLD LIMIT VALUE

The best practice is to maintain concentrations of all atmospheric contaminants as low as practical using engineering controls and work rules. Appropriate personal protective equipment may be used for additional protection of the worker from exposure. For application of TLV's or PEL's consult an industrial hygienist.

Material or Component	Exposure Limits
2-METHYLPENTANE (ISOHEXANE)	ACGIH: 500 TLV
3-METHYLPENTANE	
2,2-DIMETHYLBUTANE	
2,3-DIMETHYLBUTANE	
n-PENTANE	OSHA: 1000 TLV
n-HEXANE	OSHA: 500 TLV

Consult local authorities for acceptable exposure limits.

**SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES**

PHYSICAL STATE AND APPEARANCE: Liquid
ODOR: Slight characteristic hydrocarbon
COLOR: Clear with little or no color
BOILING/CONDENSATION PT: 49 to 63°C (120 to 145°F)
SPECIFIC GRAVITY: < 1.0 (Water=1)
VAPOR DENSITY: > 1 (Air=1)
EVAPORATION RATE: Slower than ether
VOC: 100%
SOLUBILITY IN WATER: Negligible

SECTION 10 STABILITY AND REACTIVITY

STABILITY AND REACTIVITY: The product is stable under normal conditions.
CONDITIONS TO AVOID: Open flames, heat, sparks and other ignition sources.
INCOMPATIBILITY WITH VARIOUS SUBSTANCES: Extremely reactive/ incompatible with strong oxidizers
HAZARDOUS DECOMPOSITION PRODUCTS: Does not decompose at ambient temperatures.
HAZARDOUS POLYMERIZATION: No

SECTION 11 TOXICOLOGICAL INFORMATION

ROUTES OF EXPOSURE: Inhalation, ingestion, skin, eye contact.

CHRONIC EFFECTS ON HUMANS

The substance is toxic to Lungs, Central Nervous System, Digestive System, Upper Respiratory Tract, Skin, Eyes.

OTHER TOXIC EFFECTS ON HUMANS

May be irritating to eyes, skin and respiratory system. Aspiration hazard if swallowed. Can enter lungs and cause damage.

(See Section 3 – Hazards Identification)

SPECIAL REMARKS ON CHRONIC EFFECTS ON HUMANS

Prolonged or repeated exposure to this product can cause central nervous system effects and irritation to the eyes, skin, and respiratory tract. Frequent skin contact can remove skin oils, resulting in dermatitis.

TOXICOLOGICAL DATA

N-HEXANE: Prolonged and/or repeated exposures to n-Hexane can cause progressive and potentially irreversible damage to the peripheral nervous system (e.g. fingers, feet, arms, legs, etc.). n-Hexane has been shown to cause testicular damage at high doses in male rats. The relevance of this effect for humans is unknown.

SECTION 12 ECOLOGICAL INFORMATION

ECOTOXICITY: Expected to be toxic to aquatic organisms.

MOBILITY: Highly volatile – will partition rapidly to air. Not expected to partition to sediment and wastewater solids.

SPECIAL REMARKS ON THE PRODUCTS OF BIODEGRADATION: Constituents are expected to biodegrade.

SECTION 13 DISPOSAL CONSIDERATIONS**WASTE DISPOSAL**

Disposal can occur only in properly permitted facilities in accordance with federal, state, and local regulations.

Chemical additions, processing or otherwise altering this material may make the waste management information presented in this MSDS incomplete. This material, when discarded or disposed of, may be a hazardous waste according to Federal Regulations (40 CFR 261). Under the Resource Conservation and Recovery Act (RCRA), it is the responsibility of the user of the material to characterize and determine, at the time of disposal, whether the material is a hazardous waste subject. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authorities.



Consult your local or regional authorities.

SECTION 14

TRANSPORT INFORMATION

U.S. DOT CLASSIFICATION FOR BULK SHIPMENTS

Proper Shipping Name: Hexanes

Hazard Class & Division: 3

UN/NA Number: UN 1208

Packing Group: II

HAZARDOUS SUBSTANCES REPORTABLE QUANTITY: n-HEXANE: 5,000 lbs

TDG CLASSIFICATION: Class 3: Flammable Liquid

ADR/RID CLASSIFICATION: Not available

IMO/IMDG CLASSIFICATION: Class 3: Flammable Liquid

ICAO/IATA CLASSIFICATION: Class 3: Flammable Liquid

SECTION 15

REGULATORY INFORMATION

U.S. FEDERAL REGULATIONS

TSCA: All components are listed in TSCA Inventory per 40 CFR 710.

SARA 311/312

The following chemicals in this product require reporting under the requirements of 40 CFR 370, Hazardous Chemical Reporting: Community Right-To-Know. The hazard category for each chemical is also listed.

Chemical Name	Immediate Hazard	Delayed Hazard	Fire Hazard	Pressure Hazard	Reactivity Hazard
n-HEXANE	-	X	X	-	-

SARA 313 TOXIC RELEASE

This product contains the following EPCRA Section 313 chemicals subject to the reporting requirements of the Emergency Planning and Community Right-To-Know Act of 1986:

Product Name	CAS Number	Concentration (%)
n-HEXANE	110-54-3	0 - 5

OSHA HAZARD COMMUNICATION STANDARD: When used for its intended purpose, this material is classified as hazardous in accordance with OSHA 29CFR 1910.1200.

INTERNATIONAL REGULATIONS

INTERNATIONAL INVENTORY LISTS

Australia Inventory (AICS): All components are listed or exempted.

Canada Inventory (DSL): All components are listed or exempted

China Inventory (IECSC): All components are listed or exempted.

Japan Inventory (ENCS): All components are listed or exempted

Korea Inventory (KECI): All components are listed or exempted.

Philippines Inventory (PICCS): All components are listed or exempted.

Europe Inventory (EINECS): All components are listed or exempted

STATE REGULATIONS

California Prop. 65 (no significant risk level): This product contains a chemical or chemicals known to the state of California to cause cancer, birth defects or other reproductive harm.

Please consult with local state agencies for regulatory compliance.



Additional information is available upon request.

SECTION 16**OTHER INFORMATION****REVISIONS**

This Material Safety Data Sheet (MSDS) has been created to fully comply with the guidance contained in the ANSI MSDS standard (ANSI Z400.1-1998).

DATE PREPARED: APRIL 2009**UNISOURCE® ISOHEXANE AHS**

The information presented herein has been compiled from sources considered to be dependable and is accurate as of the date of preparation of this Material Safety Data Sheet. However, Seller does not assume any liability whatsoever for the accuracy or completeness of the information contained herein. Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. In addition, no responsibility can be assumed by the Seller for any damage or injury resulting from abnormal use, from any failure to adhere to recommended practices, or from any hazards inherent in the nature of the material. Seller assumes no responsibility for injury to Buyer or to third persons or any damage to any property. Buyer assumes all such risks.