



## MATERIAL SAFETY DATA SHEET

2522 Plantation Center Drive  
Matthews, NC 28105  
(704) 845 9440

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1. PRODUCT NAME: Reclaimed Isobutyl Acetate

2. CHEMICAL NAME:

3. SYNONYMS:

4. CAS NUMBER: Mixture

5. COMPOSITION: Mixture Name: Spent Isobutyl Acetate from Pharmaceutical manufacturing  
Ingredient Name (CAS #, Chemical Formula, Synonyms) :  
Isobutyl acetate (85-100%): 110-19-0, - C<sub>6</sub>H<sub>12</sub>O<sub>2</sub>, - IBAc, - 2-Methylpropyl acetate  
Heptanes (0-3%): 142-82-5, - CH<sub>3</sub>[CH<sub>2</sub>]<sub>5</sub>H<sub>3</sub>, - .  
Water (0-3%): 7732-18-5, - H<sub>2</sub>O, - .  
Ethanol (0-3%): 64-17-5, - C<sub>2</sub>H<sub>6</sub>O, - Ethyl alcohol, EtOH  
Acetone (0-3%): 67-64-1, - (CH<sub>3</sub>)<sub>2</sub>CO, - 2-Propanone  
Acetic Acid (0-1%): 64-19-7, - CH<sub>3</sub>COOH, - Ethanoic acid  
Methanol (0-1%): 67-56-1, - CH<sub>4</sub>O, - Methyl alcohol, MeOH  
Paclitaxel (trace): 33069-62-4, - C<sub>47</sub>H<sub>51</sub>NO<sub>14</sub>, - Taxol, TX, Pac

6. PROPERTIES: APPEARANCE: Clear liquid  
ODOR: Fruity, sweet, ester  
ODOR THRESHOLD: Not available  
PH: 4-8  
MELTING POINT: Isobutyl acetate - 146 F (-99 c)  
BOILING POINT: Isobutyl acetate 244 F (118 c)  
FLASHPOINT: Isobutyl acetate 21 c (69 F), Heptanes 25 c  
EVAPORATION RATE: Isobutyl acetate 1.4  
FLAMMABILITY: Highly flammable  
UPPER EXPLOSIVE LIMIT: Isobutyl acetate 7.5 vol% @ 200 F (Heptanes 6.7%)  
LOWER EXPLOSIVE LIMIT: Isobutyl acetate 1.27 vol% (Heptanes 1.05%)  
VAPOR PRESSURE: Isobutyl acetate 16.6 mbar at 68 F  
VAPOR DENSITY: Isobutyl acetate = 4.0, Air = 1  
RELATIVE DENSITY: Not available  
SOLUBILITY: the solubility of the total dissolved solids in ceph pools is water insoluble. The liquid mix is slightly miscible with water. Isobutyl acetate solubility in water is 7 g/l at 20 c (68 F)  
PARTITION COEFFICIENT: Not available  
AUTOIGNITION TEMPERATURE: Isobutyl acetate 427 c (800 F)  
DECOMPOSITION TEMPERATURE: Not available  
MOLECULAR WEIGHT: Isobutyl acetate 116.16; Paclitaxel 854  
CHEMICAL STABILITY: Avoid heat and open flame  
CONDITIONS TO AVOID: Do not heat above boiling point.  
INCOMPATIBILITY: Oxidizing agents  
HAZARDOUS DECOMPOSITION PRODUCTS: Carbon monoxide and carbon dioxide  
HAZARDOUS POLYMERIZATION: Will not occur  
SENSITIVE TO EXPLOSION: Product is not explosive. However, formation of explosive air/vapor mixtures are possible. Explosive in presence of open flames, sparks and static. Risks of explosion of the product in presence of mechanical impact: No

7. HAZARDS: Flammable Liquid and Vapor  
High vapor concentrations may cause drowsiness and irritation of the eyes and respiratory tract.

IN CASE OF  
TRANSPORT EMERGENCY  
CONTACT CHEMTREC  
USA: 1-800-424-9300  
INTERNATIONAL: 1-703-527-3887



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8. FIRE FIGHTING INFORMATION: **FLAMMABLE PROPERTIES:** Flammable liquid  
**EXTINGUISHING MEDIA:** Use carbon dioxide, dry chemical extinguishing powder or foam. Water may be ineffective but may be used for cooling exposed containers.  
**PROTECTIVE EQUIPMENT:** Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes.  
**SPECIFIC HAZARDS:** Vapors may cause a flash fire or ignite explosively. Vapors may travel considerable distance to a ignition and flash back. Prevent buildup of vapors or gasses to explosive concentrations. Product may emit toxic fumes under fire conditions. Hazardous combustion products may include carbon dioxide, carbon monoxide and nitrogen oxides.

9. PERSONAL PROTECTION MEASURES: **ENGINEERING CONTROLS:** Operations should be designed to prevent significant exposure to the active ingredient and solvent vapors; mechanical exhaust preferred. Safety shower and eyewash required.  
**WORK PRACTICES:** The usual precautionary measures for handling chemicals should be followed. Wear suitable protective equipment; keep product contained. Keep away from foodstuffs, beverages, and feed. Remove contaminated clothing immediately. Wash hands before breaks and at the end of the work shift.  
**PERSONAL PROTECTIVE EQUIPMENT:** Wear NIOSH/OSHA – approved respirator, chemical resistant gloves, safety goggles/glasses with side shields, other PPE and clothing. Contact lenses pose a special hazard; soft lenses may absorb irritants and all lenses concentrate them.  
**EXPOSURE GUIDELINES:**  
Do not breath vapors. Do not get into eyes, on skin or on clothing. Avoid prolonged or repeated exposure. Wash thoroughly after handling. Harmful liquid. Irritant. Keep containers tightly closed. Store in cool dry place. Pregnant and nursing woman should eliminate exposure.

10. FIRST AID PROCEDURES: **EYE CONTACT:** Immediately flush eyes with water for minimum of 15 minutes. Seek medical advice.  
**INGESTION:** Wash mouth with water if patient is conscious. Seek medical assistance immediately.  
**INHALATION:** If vapor is inhaled, remove to fresh air. If required, provide artificial respiration. If breathing difficulty ensures, give oxygen and seek medical assistance.  
**SKIN CONTACT:** Immediately remove all contaminated clothing including footwear (after rinsing with water). Wash affected areas thoroughly with water (and soap if available). Seek medical attention in event of irritation.  
**NOTE TO PHYSICIANS:** Consult the Physicians Desk Reference for additional details.

11. EXPOSURE LIMITS:	Isobutyl acetate:	OSHA PEL (8hr TWA),	NIOSH PEL (8hr TWA)
	Heptanes:	150ppm,	150ppm
	Ethanol:	500ppm,	85ppm
	Acetone:	1000ppm,	1000ppm
	Acetic Acid:	1000ppm,	250ppm
	Methanol:	10ppm,	10ppm
		200ppm,	200ppm

12. TOXICOLOGICAL INFORMATION: **TOXICITY DATA:**  
**IVN LDLO:** 4995 mg/kg/3H-C (wmn) - LANCAO 343, 727, 94  
**IPR LD50:** 32530 g/kg (rat) - NTIS\*\*PB83 – 170969  
**IPR LD50:** 128 mg/kg (mus) - NTIS\*\*PB83-170969  
**IVN LD50:** 12 mg/kg (mus) - PHREEB 4, 162, 87  
**TARGET ORGAN DATA:**  
BEHAVIORAL (SOMNOLENCE)  
BEHAVIORAL (ATAXIA)  
LUNGS, THORAX OR RESPIRATION (DYSPNEA)  
LUNGS, THORAX OR RESPIRATION (RESPIRATORY DEPRESSION)



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LUNGS, THORAX OR RESPIRATION (RESPIRATORY STIMULATION)  
LUNGS, THORAX OR RESPIRATION (OTHER CHANGES)  
BLOOD (CHANGES IN BONE MARROW NOT INCLUDED)  
SKIN AND APPENDAGES (HAIR)  
MATERNAL EFFECTS (OTHER EFFECTS ON FEMALE)  
EFFECTS ON FERTILITY (PRE-IMPLANTATION MORTALITY)  
EFFECTS ON EMBRYO OR FETUS (EXTRAEMBRYONIC STRUCTURES)  
SPECIFIC DEVELOPMENT ABNORMALITIES (MUSCULOSKELETAL SYSTEM)  
EFFECTS ON NEWBORN (GROWTH STATISTICS)  
EFFECTS ON NEWBORN (BEHAVIORAL)  
EFFECTS ON NEWBORN (PHYSICAL)  
EFFECTS ON NEWBORN (DELAYED EFFECTS).

TAXANES: (References paclitaxel for toxicity Data and Target Organ Data.)

ISOBUTYL ACETATE:

Oral LD50: >4350 mg/kg (rat)

Oral LD50: >4800 mg/kg (rabbit)

Inhalation LC50: 3500 – 8000 ppm/4 hr (rat)

Irritation of skin and eye: slight (rabbit)

METHANOL:

Oral LDLO: 6422 mg/kg (man) – Remarks: Brain and Coverings: Changes in circulation (hemorrhage, thrombosis, etc.). Lungs, Thorax, or Respiration: Dyspnea. Gastrointestinal: Nausea or vomiting.

Oral LDLO: 428 mg/kg (human) – Remarks: Behavioral: Headache, Lungs, Thorax, or Respiration: Other changes.

Oral LDLO: 143 mg/kg (human) – Remarks: Sense and Special Senses (Nose, Eye, Ear, and Taste): Eye: Optic nerve neuropathy. Lungs, Thorax, or Respiration: Dyspnea. Gastrointestinal: Nausea or vomiting.

Oral LD50: 5628 mg/kg (rat)

Inhalation LC50: 64,000ppm (rat)

Intraperitoneal LD50: 7529 mg/kg (rat)

Intravenous LD50: 2131 mg/kg (rat)

Oral LD50: 7300 mg/kg (mouse)

Intraperitoneal LD50: 10765 mg/kg (mouse)

Subcutaneous LD50: 9800 mg/kg (mouse)

Intravenous LD50: 4710 mg/kg (mouse)

Oral Monkey 7000 mg/kg LD50 – Remarks: Behavioral: Muscle weakness. Behavioral: Ataxia. Behavioral: Coma.

Oral LD50: 14200 mg/kg (rabbit)

Skin LD50: 15800 mg/kg (rabbit)

Intraperitoneal LD50: 1826 mg/kg (rabbit)

Intravenous LD50: 8907 mg/kg (rabbit)

Intraperitoneal LD50: 3556 mg/kg (guinea pig)

Intraperitoneal LD50: 8555 mg/kg (hamster)

ACETIC ACID:

Acute oral toxicity LD50: 3310 mg/kg (rat)

Acute toxicity of the vapor LC50: 5620 ppm 1hr (muskrat)

ACUTE HEALTH EFFECTS:

INGESTED: Irritating to respiratory and GI tract; may cause drowsiness.

EYE EXPOSURE: May be irritating to the eyes and is capable of causing a mild, temporary redness of the conjunctiva, temporary impairment of vision and/or other transient eye damage/ ulceration.

SKIN EXPOSURE: Isobutyl acetate causes moderate irritation of the skin, eyes and upper respiratory tract. Open cuts, abraded or irritated skin should not be exposed to this material. No sensitizing effects known.



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**INHALATION:** Vapor may be irritating to the upper respiratory tract and may be harmful if inhaled. Persons with impaired respiratory function, airway diseases and conditions such as emphysema or chronic bronchitis, may get further disability if excessive concentrations of particulate are inhaled. Inhalation of isobutyl acetate may cause drowsiness.

**CHRONIC HEALTH EFFECTS:** Primary routes of exposure are by skin contact/absorption and inhalation of vapor. Chronic exposure may affect the respiratory system, eyes and CNS.

13. **ECOLOGICAL PERSISTENCE AND DEGRADABILITY:** Unavailable

**INFORMATION: BIOACCUMULATIVE POTENTIAL:** Unavailable

**MOBILITY IN SOIL:** Unavailable

**OTHER ADVERSE EFFECTS:** Unavailable

Do not allow material to be released to the environment without proper governmental permit.

14. **DISPOSAL DESCRIPTION OF WASTE RESIDUE:** Wet spill clean up materials

**CONSIDERATIONS: SAFE HANDLING AND METHODS OF DISPOSAL:** Follow all federal, state, and local environment regulations. Incineration is the preferred method.

15. **CARCINOGENIC  
PROPERTIES &  
NOTIFICATIONS:**

16. **TRANSPORT UN Number:** 1993

**INFORMATION: UN Proper Shipping Name:** Flammable Liquid, N.O.S.

**Transport Hazard Class:** Flammable liquid

**Packing group:** Isobutyl acetate-Class 3 Packing Group II (Flammable Liquid)

**Marine Pollutant?:** Unknown

**Special Precautions?:** Unknown

17. **HANDLING & STORAGE: HANDLING:** Do not breathe vapors. Do not get in eyes, on skin, on clothing. Avoid prolonged or repeated exposure. Use adequate ventilations. Wash thoroughly after handling.

**STORAGE:** Keep the container securely sealed. Store in cool, dry, adequately ventilated place. Protect from light.

**INCOMPATIBLE MATERIALS:** Material can react violently with oxidizing agents.

**PROTECTION AGAINST FIRE AND EXPLOSION:** Protect against electrostatic charges, heat, sparks and flame. Fumes can combine with air to form an explosive mixture.

**ACCIDENTAL RELEASE MEASURES**

**PROCEDURES IN CASE OF SPILLED:** Clean up spills immediately. Keep away from ignition sources. Keep unprotected persons away. Prevent from entering drains, sewers or streams.

**PERSONAL PRECAUTIONS:** Wear NIOSH approved carbon cartridge respirator, goggles, and chemical resistant gloves. Avoid breathing vapors and avoid contact with skin and eyes.

**CLEANUP PROCEDURES:** Absorb with vermiculite or other inert material, then place in hazardous waste container. Ensure adequate ventilation. Keep away from ignition sources. Decontaminate site after material pickup is complete.

18. **REGULATORY TSCA Listed (US Toxic Substance Control Act):** Yes

**INFORMATION: CERCLA Section 103:** No

**SARA Section 302:** No

**SARA Section 304:** No

**SARA Section 313:** Acetic acid, Acetone, Methanol-Yes