

**SAFETY DATA SHEET**

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**1. SUBSTANCE AND SOURCE IDENTIFICATION**

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**Product Identifier**

**SRM Number:** 2490  
**SRM Name:** Non-Newtonian Polymer Solution for Rheological Measurements  
(Polyisobutylene dissolved in 2,6,10,14-Tetranethylpentadecane)  
**Other Means of Identification:** Not applicable.

**Recommended Use of This Material and Restrictions of Use**

This Standard Reference Material (SRM) is intended primarily for the evaluation of methods for analysis of materials of similar matrix. A unit of SRM 2490 consists of 100 mL of the solution, which contain a mass fraction of 0.114 polyisobutylene and is packaged in an amber glass bottle.

**Company Information**

National Institute of Standards and Technology  
Standard Reference Materials Program  
100 Bureau Drive, Stop 2300  
Gaithersburg, Maryland 20899-2300

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+1-703-527-3887 (International)

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**2. HAZARDS IDENTIFICATION**

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**Classification**

**Physical Hazard:** Not classified.  
**Health Hazard:** Skin Corrosion/Irritant Category 2  
Eye Damage and Irritation Category 2A

**Label Elements****Symbol****Signal Word**

WARNING

**Hazard Statement(s)**

H315 Causes skin irritation.  
H319 Causes serious eye irritation.

**Precautionary Statement(s)**

P264 Wash hands thoroughly after handling.  
P280 Wear protective gloves and clothing and eye protection.  
P302+P352 If on skin: Wash with plenty of water.  
P333+P313 If skin irritation or rash occurs, get medical attention.  
P305+P351+P338 If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do. Continue rinsing.  
P337+P313 If eye irritation persists: Get medical attention.  
P362+P364 Take off contaminated clothing and wash it before reuse.

**Hazards Not Otherwise Classified:** None.

**Ingredients(s) with Unknown Acute Toxicity:** None.

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### 3. COMPOSITION AND INFORMATION ON HAZARDOUS INGREDIENTS

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**Substance:** 2,6,10,14-Tetramethylpentadecane

**Other Designations:** pristane; robuoy; norphytane

Components are listed in compliance with OSHA's 29 CFR 1910.1200. See the NIST Certificate of Analysis for actual concentration.

Hazardous Component(s)	CAS Number	EC Number (EINECS)	Nominal Mass Concentration (%)
2,6,10,14-Tetramethylpentadecane	1971-70-6	217-650-8	100

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### 4. FIRST AID MEASURES

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#### Description of First Aid Measures

**Inhalation:** If adverse effects occur, remove to well-ventilated (uncontaminated) area. If breathing is difficult, qualified personnel may administer oxygen. If not breathing, qualified personnel should give artificial respiration. Seek immediate medical attention.

**Skin Contact:** Rinse affected skin with water for at least 15 minutes, and then wash thoroughly with soap or mild detergent and water. If skin irritation persists, seek medical aid and bring the container or label.

**Eye Contact:** Immediately flush eyes, including under the eyelids, with copious amounts of water for at least 15 minutes. Seek immediate medical attention.

**Ingestion:** If a large amount is swallowed, seek medical attention.

**Most Important Symptoms/Effects, Acute and Delayed:** Respiratory tract, skin, and eye irritation

**Indication of any immediate medical attention and special treatment needed, if necessary:** If any of the above symptoms are present, seek immediate medical attention.

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### 5. FIRE FIGHTING MEASURES

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**Fire and Explosion Hazards:** Slight fire hazard. See Section 9, "Physical and Chemical Properties" for flammability properties.

#### Extinguishing Media

Suitable: Regular dry chemical, carbon dioxide, water, or regular foam.

Unsuitable: None listed.

**Specific Hazards Arising from the Chemical:** Not applicable.

**Special Protective Equipment and Precautions for Fire-Fighters:** Move container from fire area if it can be done without personal risk. Avoid inhalation of material or combustion by-products. Wear full protective clothing and NIOSH-approved self-contained breathing apparatus (SCBA).

**NFPA Ratings** (0 = Minimal; 1 = Slight; 2 = Moderate; 3 = Serious; 4 = Severe)

Health = 2                  Fire = 1                  Reactivity = 0

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### 6. ACCIDENTAL RELEASE MEASURES

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**Personal Precautions, Protective Equipment and Emergency Procedures:** Use suitable protective equipment; see Section 8, "Exposure Controls and Personal Protection".

**Methods and Materials for Containment and Clean up:** Absorb with sand or other non-combustible material. Collect in an appropriate container for proper disposal.

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### 7. HANDLING AND STORAGE

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**Safe Handling Precautions:** Use suitable personal protection equipment (PPE). See Section 8, "Exposure Controls and Personal Protection".

**Storage and Incompatible Materials:** Store in a well-ventilated area.

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### 8. EXPOSURE CONTROLS AND PERSONAL PROTECTION

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**Exposure Limits:** No occupational exposure limits have been established for this material.

**Engineering Controls:** Provide local exhaust or process enclosure ventilation system. Ensure compliance with applicable exposure limits.

**Personal Protection Measures:** In accordance with OSHA 29 CFR 1910.132, subpart I, wear appropriate PPE to minimize exposure to this material.

**Respiratory Protection:** If workplace conditions warrant a respirator, a respiratory protection program that meets OSHA 29CFR 1910.134 must be followed. Refer to NIOSH 42 CFR 84 for applicable certified respirators.

**Eye Protection:** Splash resistant safety goggles and emergency eyewash are recommended.

**Skin and Body Protection:** Chemical resistant clothing and gloves are recommended.

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## 9. PHYSICAL AND CHEMICAL PROPERTIES

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<b>Properties</b>	2,6,10,14-Tetramethylpentadecane
<b>Molar Mass (g/mol)</b>	268.53
<b>Molecular Formula</b>	C <sub>19</sub> H <sub>40</sub>
<b>Appearance (physical state, color, etc.)</b>	clear, colorless liquid
<b>Odor</b>	faint odor
<b>Odor threshold</b>	not available
<b>pH</b>	not available
<b>Evaporation rate</b>	not available
<b>Melting point/freezing point</b>	-100 °C to -60 °C (-148 °F to -76 °F)
<b>Relative Density as Specific Gravity (water = 1)</b>	0.775 to 0.795
<b>Density</b>	not available
<b>Vapor Pressure</b>	not available
<b>Vapor Density (air = 1)</b>	not available
<b>Viscosity</b>	5 cP at 25 °C
<b>Solubilities</b>	insoluble in water soluble in benzene, carbon tetrachloride, chloroform, ether, organic solvents, petroleum ether
<b>Partition coefficient (n-octanol/water)</b>	not available
<b>Thermal Stability Properties</b>	290 °C to 296 °C (554 °F to 565 °F)
<b>Autoignition Temperature</b>	not available
<b>Thermal Decomposition</b>	not available
<b>Initial boiling point and boiling range</b>	not available
<b>Explosive Limits, LEL (Volume %)</b>	not available
<b>Explosive Limits, UEL (Volume %)</b>	not available
<b>Flash Point</b>	>110 °C (>230 °F)
<b>Flammability (solid, gas)</b>	not applicable

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## 10. STABILITY AND REACTIVITY

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**Reactivity:** This material is stable at normal temperatures and pressure.

**Stability:**      Stable      Unstable

**Possible Hazardous Reactions:** Not applicable.

**Conditions to Avoid:** Avoid heat, flames, sparks and other sources of ignition. Avoid contact with incompatible materials..

**Incompatible Materials:** Oxidizing materials.

**Hazardous Decomposition:** Oxides of carbon.

**Hazardous Polymerization:**      Will Occur      Will Not Occur

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## 11. TOXICOLOGICAL INFORMATION

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**Route of Exposure:**      Inhalation      Skin      Ingestion

**Symptoms Related to the Physical, Chemical and Toxicological Characteristics:** May cause skin irritation and eye irritaiton. May aggravate respiratory disorders.

**Potential Health Effects (Acute, Chronic, and Delayed)**

**Inhalation:** Inhalation of may cause severe irritation. Inhalation of high concentrations may be destructive to



SARA Title III Sections 311/312 Hazardous Categories (40 CFR 370.21)

ACUTE HEALTH: Yes  
CHRONIC HEALTH: No  
FIRE: No  
REACTIVE: No  
PRESSURE: No

**State Regulations**

California Proposition 65: Not listed.

**U.S. TSCA Inventory:** 2,6,10,14-tetramethylpentadecane is listed.

**TSCA 12(b), Export Notification:** Not listed.

**Canadian Regulations:** WHMIS Information is not provided for this material.

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**16. OTHER INFORMATION**

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**Issue Date:** 30 April 2015

**Sources:** ChemADVISOR, Inc., SDS , *2,6,10,14-Tetramethylpentadecane*, 15 December 2014.

Vendor SDS, Sigma-Aldrich Safety Data Sheet, *Pristane*, Revision Date 09 July 2014.

**Key of Acronyms:**

ACGIH	American Conference of Governmental Industrial Hygienists	NTP	National Toxicology Program
CAS	Chemical Abstracts Service	OSHA	Occupational Safety and Health Administration
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act	PEL	Permissible Exposure Limit
CFR	Code of Federal Regulations	RCRA	Resource Conservation and Recovery Act
DOT	Department of Transportation	REL	Recommended Exposure Limit
EINECS	European Inventory of Existing Commercial Chemical Substances	RQ	Reportable Quantity
EPCRA	Emergency Planning and Community Right-to-Know Act	RTECS	Registry of Toxic Effects of Chemical Substances
IARC	International Agency for Research on Cancer	SARA	Superfund Amendments and Reauthorization Act
IATA	International Air Transportation Agency	SCBA	Self-Contained Breathing Apparatus
IDLH	Immediately Dangerous to Life and Health	SRM	Standard Reference Material
LC50	Lethal Concentration	STOT	Specific Target Organ Toxicity
LD50	Median Lethal Dose or Lethal Dose, 50 %	STEL	Short Term Exposure Limit
LEL	Lower Explosive Limit	TLV	Threshold Limit Value
MSDS	Material Safety Data Sheet	TPQ	Threshold Planning Quantity
NFPA	National Fire Protection Association	TSCA	Toxic Substances Control Act
NIOSH	National Institute for Occupational Safety and Health	TWA	Time Weighted Average
NIST	National Institute of Standards and Technology	UEL	Upper Explosive Limit
n.o.s.	Not Otherwise Specified	WHMIS	Workplace Hazardous Materials Information System

**Disclaimer:** Physical and chemical data contained in this SDS are provided only for use in assessing the hazardous nature of the material. The SDS was prepared carefully, using current references; however, NIST does not certify the data in the SDS. The values for this material are given in the NIST Certificate of Analysis.

Users of this SRM should ensure that the SDS in their possession is current. This can be accomplished by contacting the SRM Program: telephone (301) 975-2200; fax (301) 948-3730; e-mail [srmmsds@nist.gov](mailto:srmmsds@nist.gov); or via the Internet at <http://www.nist.gov/srm>.