

### 1. Chemical product and company identification

<b>Product name</b>	INDOPOL® H-1500, H-1900, H-2100, H-6000, H-18000
<b>MSDS #</b>	0000000012
<b>Code</b>	0000000012 (NAP)
<b>Product use</b>	Fuel additive. Sealants Coatings Lubricants Cling film. Adhesives
<b>Supplier</b>	INEOS Canada Partnership P.O. Box 890 Red Deer, Alberta, Canada T4N 5H3
<b>EMERGENCY SPILL INFORMATION:</b>	1 (613) 996-6666 CANUTEC (Canada)
<b>OTHER PRODUCT INFORMATION</b>	1-866-363-2454 email: OLIGOMERSMSDS@innovene.com

### 2. Composition/information on ingredients

Ingredient name	CAS #	% by weight	LC50/LD50
Polybutene (Isobutylene/butene copolymer)	9003-29-6	100	ORAL (LD50): Acute: >34600 mg/kg [Rat (similar material)]. DERMAL (LD50): Acute: >10250 mg/kg [Rat (similar material)].

### 3. Hazards identification

<b>Physical state</b>	Liquid.
<b>Color</b>	Clear. Colorless.
<b>Emergency overview</b>	CAUTION!  Slightly irritating to the eyes.  Keep away from heat, sparks and flame. Keep container closed.  Do not breathe vapor or mist. Use only with adequate ventilation. Do not ingest. Avoid contact with eyes. Wash thoroughly after handling.
<b>Routes of entry</b>	Dermal contact. Eye contact. Inhalation. Ingestion.
<b>Potential health effects</b>	
<b>Eyes</b>	Slightly irritating to the eyes. Heated material can cause thermal burns.
<b>Skin</b>	Prolonged or repeated contact may dry skin and cause irritation. Heated material can cause thermal burns.
<b>Inhalation</b>	Exposure to aerosols or particulates from heated material may cause adverse lung effects if high concentrations are inhaled.
<b>Ingestion</b>	Ingestion may cause gastrointestinal irritation and diarrhea.

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**Medical conditions  
aggravated by over-  
exposure**

None identified.

See toxicological information (section 11)

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## 4. First aid measures

<b>Eye contact</b>	Hot material: Flush eyes with plenty of water for at least 15 minutes. Seek medical assistance for mechanical removal of this material from the eye. The use of flush fluid, other than water, is not recommended. Cold material: flush eyes with plenty of water. Get medical attention.
<b>Skin contact</b>	Hot material: Immediately flush with cool water for at least 15 minutes. Get immediate medical attention. Cold material: Clean exposed skin with waterless hand cleaner.
<b>Inhalation</b>	If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.
<b>Ingestion</b>	Do NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. If large quantities of this material are swallowed, call a physician immediately.
<b>Notes to physician</b>	Medical personnel may leave the material in place to minimize physical damage to the skin. Medical personnel may cover the material with a burn gel to prevent the adhesion of the dressing to the material.

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## 5. Fire-fighting measures

<b>Flammability of the product</b>	May be combustible at high temperature.
<b>Flash point</b>	>250 °C (Open cup) Cleveland. 170 to 180 °C (Closed cup) Pensky-Martens.
<b>Products of combustion</b>	These products are carbon oxides (CO, CO <sub>2</sub> ) (carbon monoxide, carbon dioxide).
<b>Unusual fire/explosion hazards</b>	Rapid depolymerization can occur in a fire and produce flammable vapors. May depolymerize at temperatures above 200°C with the production of extremely flammable butene monomers.  Where open cell insulation has been contaminated with polybutene, spontaneous combustion may occur at temperatures as low as 138°C (280°F). Therefore, where open cell insulation has been used, the temperature of storage tanks and heat tracing must be kept well below 120°C (250°F) and any insulation contaminated with polybutene should be replaced immediately.
<b>Fire-fighting media and instructions</b>	In case of fire, use water fog, foam, dry chemicals, or carbon dioxide. Do not use water jet. DO NOT FIGHT FIRE WHEN IT REACHES MATERIAL. Withdraw from fire and let it burn. Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. First move people out of line-of-sight of the scene and away from windows. Cool containing vessels with water jet in order to prevent pressure build-up, autoignition or explosion.
<b>Protective clothing (fire)</b>	Fire-fighters should wear positive pressure self-contained breathing apparatus (SCBA) and full turnout gear.

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## 6. Accidental release measures

<b>Personal precautions</b>	Immediately contact emergency personnel. Eliminate all ignition sources. Keep unnecessary personnel away. Do not touch or walk through spilled material. Use suitable protective equipment (See Section: "Exposure controls/personal protection"). Follow all fire fighting procedures (See Section: "Fire-fighting measures").
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### Environmental precautions and clean-up methods

If emergency personnel are unavailable, contain spilled material. For small spills add absorbent (soil may be used in the absence of other suitable materials) scoop up material and place in a sealed, liquid-proof container for disposal. For large spills dike spilled material or otherwise contain material to ensure runoff does not reach a waterway. Place spilled material in an appropriate container for disposal. Avoid contact of spilled material with soil and prevent runoff entering surface waterways. Treat as an oil spill. insoluble in water. See Section 13 for Waste Disposal Information.

### Personal protection in case of a large spill

Splash goggles. Full suit. Boots. Gloves. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product.

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## 7. Handling and storage

### Handling

Do not ingest. If ingested do not induce vomiting. Use only with adequate ventilation. Do not breathe vapor or mist. Avoid prolonged or repeated contact with skin. Avoid contact with eyes. Wash thoroughly after handling.

Keep away from heat, sparks and flame. To avoid fire or explosion, dissipate static electricity during transfer by grounding and bonding containers and equipment before transferring material. Use explosion-proof electrical (ventilating, lighting and material handling) equipment.

Where open cell insulation has been contaminated with polybutene, spontaneous combustion may occur at temperatures as low as 138°C (280°F). Therefore, where open cell insulation has been used, the temperature of storage tanks and heat tracing must be kept well below 120°C (250°F) and any insulation contaminated with polybutene should be replaced immediately.

Empty containers may contain harmful, flammable/combustible or explosive residue or vapors. Do not cut, grind, drill, weld, reuse or dispose of containers unless adequate precautions are taken against these hazards.

Avoid contact of spilled materials and runoff with soil and surface waterways.

### Storage

Store in a segregated and approved area. A potentially flammable atmosphere may be generated if material is held hot for prolonged periods. For prolonged storage at temperatures of 60C and above, keep in rust-free tanks and exclude oxygen by use of a nitrogen blanket. Heating systems which generate localized hot spots should never be used. Suitable storage materials are: mild steel / carbon steel. Store and use away from heat, sparks, open flame, or any other ignition source. Keep container in a cool, well-ventilated area. Keep container tightly closed and sealed until ready for use.

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## 8. Exposure controls/personal protection

### Occupational exposure limits

#### Ingredient name

#### Occupational exposure limits

Polybutene (Isobutylene/butene copolymer) None assigned.

### Control Measures

Use only with adequate ventilation. Ensure that eyewash stations and safety showers are close to the work-station location.

### Hygiene measures

Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period.

### Personal protection

#### Eyes

Safety glasses with side shields. Goggles, face shield or other full-face protection should be worn if there is a risk of direct exposure to aerosols or splashes or when material is handled hot.

#### Skin and body

Wear apron or coverall if potential for exposure to splashes. When handling hot material, wear heat resistant protective gloves, clothing and face shield that are able to withstand the temperature of the heated product.

#### Respiratory

If ventilation is inadequate, use respirator that will protect against organic vapor and dust/mist.

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## Hands

Wear gloves that cannot be penetrated by chemicals or oil. (Nitrile gloves.)

Wear heat-resistant protective gloves that are able to withstand the temperature of heated product.

The correct choice of protective gloves depends upon the chemicals being handled, the conditions of work and use, and the condition of the gloves (even the best chemically resistant glove will break down after repeated chemical exposures). Most gloves provide only a short time of protection before they must be discarded and replaced. Because specific work environments and material handling practices vary, safety procedures should be developed for each intended application. Gloves should therefore be chosen in consultation with the supplier/manufacturer and with a full assessment of the working conditions.

## Feet

Consult your supervisor or S.O.P. for special handling directions

Consult local authorities for acceptable exposure limits.

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## 9. Physical and chemical properties

Physical state	Liquid.
pH	Not available.
Odor	Characteristic.
Odor threshold	Not available.
Color	Clear. Colorless.
Boiling point / Range	Not available.
Melting point / Range	Not available.
Pour Point	18 to 50 °C
Specific gravity	0.908 to 0.921
Vapor pressure	Not available.
Vapor Density (Air = 1)	Not available.
Evaporation rate	Not available.
Solubility	Insoluble in cold water, hot water.
LogK <sub>ow</sub>	Not available.
Viscosity	Kinematic: 2900 to 45000 mm <sup>2</sup> /s (2900 to 45000 cSt) at 100°C SUS: 14230 to 188500 SUS at 100°C

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## 10. Stability and reactivity

Stability and reactivity	Stable under recommended storage and handling conditions (See Section: "Handling and storage"). May depolymerize at temperatures above 200°C with the production of extremely flammable butene monomers.
Conditions to avoid	Keep away from all sources of ignition, heat, sparks, flame. Avoid strong oxidizing conditions. Avoid extended exposure to temperatures above 60° C in the presence of air. May depolymerize at temperatures above 200°C with the production of extremely flammable butene monomers.
Incompatibility with various substances	Strong oxidizing agents; acidic clays at > 100C.
Hazardous decomposition products	carbon oxides (CO, CO <sub>2</sub> ) (carbon monoxide, carbon dioxide)
Hazardous polymerization	Will not occur.

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## 11. Toxicological information

### Acute toxicity

Similar materials were practically non-toxic when tested in acute oral (rat LD50 > 34,600 mg/kg), dermal (rabbit LD50 > 10,250 mg/kg). Inhalation of a similar product for 4 hours at 4,820 mg/m<sup>3</sup> resulted in 50% mortality in rats. The absence of adverse effects following skin and oral administration of similar materials indicate the deaths observed in the inhalation study were not due to a systemic toxic effect, but rather due to a local effect on the lungs. The air concentration at which this study was conducted was extremely high and is not typically encountered under normal conditions of use.

A range of similar materials have been tested for eye and skin irritation. For eye irritation, none of these materials have produced scores exceeding 8.0 out of a possible total of 110 with complete disappearance of effects in 72 hours (rabbits). Consequently these materials are expected to be mildly irritating to the eyes. When applied to the skin of rabbits similar materials scored 1.5 out of a possible total of 8.0, indicating that this product may be a slight skin irritant.

Ingredient name	Test	Result	Route	Species
Polybutene (Isobutylene/butene copolymer)	LD50	>34600 mg/kg	Oral	Rat (similar material)
	LD50	>10250 mg/kg	Dermal	Rat (similar material)
	LC50	4820 mg/m <sup>3</sup> (4 hour(s))	Inhalation	Rat (similar material)

### Chronic toxicity

#### Carcinogenic effects

No component of this product at levels greater than 0.1% is identified as a carcinogen by ACGIH or the International Agency for Research on Cancer (IARC). No component of this product present at levels greater than 0.1% is identified as a carcinogen by the U.S. National Toxicology Program (NTP) or the U.S. Occupational Safety and Health Act (OSHA).

#### Mutagenic effects

No component of this product at levels greater than 0.1% is classified by established regulatory criteria as a mutagen.

#### Reproductive effects

No component of this product at levels greater than 0.1% is classified by established regulatory criteria as a reproductive toxin.

#### Teratogenic effects

No component of this product at levels greater than 0.1% is classified by established regulatory criteria as teratogenic or embryotoxic.

## 12. Ecological information

### Ecotoxicity

>1000 mg/l [LC50, (WSF) Nominal Concentration, similar material], 96 hour(s) [Fish (Trout)].  
>1000 mg/l [LC50, (WSF) Nominal Concentration, similar material], 96 hour(s) [Minnows]. >1000 mg/l [EC50, (WSF) Nominal Concentration, similar material], 48 hour(s) [Daphnia].

### Persistence/degradability

This product is unlikely to biodegrade at a significant rate.

### Mobility

This product is not likely to move rapidly with surface or groundwater flows because of its low water solubility.

### Bioaccumulative potential

This product is not expected to bioaccumulate through food chains in the environment.

### Other ecological information

Aquatic studies of materials with very low water solubility often refer to the amount of chemical added to the test system, not the amount dissolved in water. Most acute aquatic toxicity studies of these have used the water-accommodated fraction (WAF) obtained by mixing the test chemical in water for 20 to 24 hours, then siphoning the water for use in the test. The water-soluble fraction (WSF) is a similar approach.

These materials are not expected to adversely affect microbial activity. Following a modified OECD Method 209, bacterial inhibition using activated sludge microbes was tested with several grades of this material. The tests showed no bacterial inhibition at loadings of up to 25 mg/L, measured through oxygen consumption (respiration). In separate tests, the biological oxygen

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demand (BOD) of the microorganisms was measured. In these tests, there was no evidence of bacterial toxicity, even at loadings of about 200,000 mg/L. In addition, an epoxidized form of this material was found to be non-mutagenic and non-toxic to the microorganism used in the Ames mutagenicity assay, Salmonella typhimurium.

## 13. Disposal considerations

### Waste information

Avoid contact of spilled material and runoff with soil and surface waterways. Consult an environmental professional to determine if local, regional or national regulations would classify spilled or contaminated materials as hazardous waste. Use only approved transporters, recyclers, treatment, storage or disposal facilities. Dispose of in accordance with all applicable local and national regulations.

Empty containers may contain harmful, flammable/combustible or explosive residue or vapors. Do not cut, grind, drill, weld, reuse or dispose of containers unless adequate precautions are taken against these hazards. Labels should not be removed from containers until they have been cleaned.

Consult your local or regional authorities.

## 14. Transport information

### International transport regulations

Regulatory information	UN number	Proper shipping name	Class	Packing group	Label	Additional information
<b>DOT Classification</b>	UN3257	Elevated temperature liquid, n.o.s.	9	III	----	Not determined.
<b>TDG Classification</b>	UN3257	Elevated temperature liquid, n.o.s.	9	III	----	Not determined.
<b>IMDG Classification</b>	UN3257	Elevated temperature liquid, n.o.s.	9	III	----	Not determined.
<b>IATA Classification</b>	----	Forbidden	----	----	----	Not determined.

### Nonbulk Shipping Information

<b>D O T Nonbulk Shipping Information</b>	When this material is shipped at temperatures < 100C this material is not regulated for transport.
<b>T D G Nonbulk Shipping Information</b>	When this material is shipped at temperatures < 100C this material is not regulated for transport.
<b>IMDG Nonbulk Shipping Information</b>	When this material is shipped at temperatures < 100C this material is not regulated for transport.
<b>IATA Nonbulk Shipping Information</b>	When this material is shipped at temperatures < 100C this material is not regulated for transport.

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## 15. Regulatory information

**U.S. Federal regulations** US INVENTORY (TSCA): In compliance.

**WHMIS (Canada)** Not controlled under WHMIS (Canada).

The inventory status and regulatory information shown here are based on CAS number 9003-29-6.  
This material may also be described by CAS number 9044-17-1.

If listed, this product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all the information required by the Controlled Products Regulations for those regulated products.

**Inventories**

AUSTRALIAN INVENTORY (AICS): In compliance.

CANADA INVENTORY (DSL): In compliance.

CHINA INVENTORY (IECS): In compliance.

EC INVENTORY (EINECS/ELINCS): In compliance.

JAPAN INVENTORY (ENCS): In compliance.

KOREA INVENTORY (ECL): In compliance.

PHILIPPINE INVENTORY (PICCS): In compliance.

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## 16. Other information

**Label requirements** CAUTION!  
Slightly irritating to the eyes.

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**Prepared by** Product Stewardship

### Notice to reader

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