



POLYETHYLENE WAX

Bisley International LLC

SECTION 1 Identification

Product Identifier

Product name	POLYETHYLENE WAX
Chemical Name	polyethylene
Chemical formula	(C ₂ H ₄) _x [(C ₂ H ₄) _x]
Other means of identification	Not Available
CAS number	9002-88-4

Recommended use of the chemical and restrictions on use

Relevant identified uses	<p>Used as a flattening agent in paints. Also as a suspending agent in paint. Some grades may be emulsified in aqueous alkali; and these emulsions are used to give wear properties in water based floor polishes.</p> <p>Synthetic polymer.</p> <p>Polyalphaolefins (PAO) dimers are used primarily for drilling fluids additives and hydraulic fluids, but they can also be used as blended components for light oil lubricant formulations (such as crankcase oil, gear oil, automatic transmission fluid, compressor oils, 2-cycle engine oil and greases, for example) and other industrial uses.</p> <p>PAO dimers meet the FDA technical white oil specifications and may be used as a component of non-food articles intended for use in contact with food pursuant to the provisions of the technical white mineral oil indirect additive regulations [21 CFR 178.3620(b)(1)]. These PAOs are also qualified for incidental food contact per NSF approval, equivalent to former USDA H1 classification, as lubricants, anti-rust films, tank closure gasket and seal release agents, in federally inspected meat and poultry establishments.</p>
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Name, address, and telephone number of the chemical manufacturer, importer, or other responsible party

Registered company name	Bisley International LLC
Address	1790 Hughes Landing Boulevard Suite 400 The Woodlands TX 77380 United States
Telephone	+1 (844) 424 7539
Fax	Not Available
Website	www.bisley.biz
Email	compliance@bisley.biz

Once connected and if the message is not in your preferred language then please dial 01



SECTION 2 Hazard(s) identification

Classification of the substance or mixture

Not considered a Hazardous Substance by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200). Not classified as Dangerous Goods for transport purposes.

Hazard statement(s)

Not Applicable

Hazard(s) not otherwise classified

Not Applicable

Precautionary statement(s) Prevention

Not Applicable

Precautionary statement(s) Response

Not Applicable

Precautionary statement(s) Storage

Not Applicable

Precautionary statement(s) Disposal

Not Applicable

SECTION 3 Composition / information on ingredients

Substances

CAS No	%[weight]	Name
Not Available		polyethylene wax as atactic polyethylene as
9002-88-4	>=98	<u>polyethylene</u>
Not Available		polyethylene polymers
Not Available		of various molecular weights
Not Available		some reacted with Maleic anhydride for
Not Available		emulsification on neutralisation
Not Available		No other ingredient information supplied

The specific chemical identity and/or exact percentage (concentration) of composition has been withheld as a trade secret.

Mixtures

See section above for composition of Substances



SECTION 4 First-aid measures

Description of first aid measures

Eye Contact	<p>If this product comes in contact with eyes:</p> <ul style="list-style-type: none"> ▶ Wash out immediately with water. ▶ If irritation continues, seek medical attention. <p>Removal of contact lenses after an eye injury should only be undertaken by skilled personnel.</p> <p>For THERMAL burns:</p> <ul style="list-style-type: none"> ▶ Do NOT remove contact lens
Skin Contact	<ul style="list-style-type: none"> ▶ Lay victim down, on stretcher if available and pad BOTH eyes, make sure dressing does not press on the injured eye by placing thick pads under dressing, above and below the eye. ▶ Seek urgent medical assistance, or transport to hospital. <p>If skin or hair contact occurs:</p> <ul style="list-style-type: none"> ▶ Flush skin and hair with running water (and soap if available). ▶ Seek medical attention in event of irritation. <p>In case of burns:</p> <ul style="list-style-type: none"> ▶ Immediately apply cold water to burn either by immersion or wrapping with saturated clean cloth. ▶ DO NOT remove or cut away clothing over burnt areas. DO NOT pull away clothing which has adhered to the skin as this can cause further injury. ▶ DO NOT break blister or remove solidified material. ▶ Quickly cover wound with dressing or clean cloth to help prevent infection and to ease pain. ▶ For large burns, sheets, towels or pillow slips are ideal; leave holes for eyes, nose and mouth. ▶ DO NOT apply ointments, oils, butter, etc. to a burn under any circumstances. ▶ Water may be given in small quantities if the person is conscious. ▶ Alcohol is not to be given under any circumstances. ▶ Reassure. ▶ Treat for shock by keeping the person warm and in a lying position. ▶ Seek medical aid and advise medical personnel in advance of the cause and extent of the injury and the estimated time of arrival of the patient. <p>For thermal burns:</p> <ul style="list-style-type: none"> ▶ Decontaminate area around burn. ▶ Consider the use of cold packs and topical antibiotics. <p>For first-degree burns (affecting top layer of skin)</p> <ul style="list-style-type: none"> ▶ Hold burned skin under cool (not cold) running water or immerse in cool water until pain subsides. ▶ Use compresses if running water is not available. ▶ Cover with sterile non-adhesive bandage or clean cloth. ▶ Do NOT apply butter or ointments; this may cause infection. ▶ Give over-the counter pain relievers if pain increases or swelling, redness, fever occur. <p>For second-degree burns (affecting top two layers of skin)</p> <ul style="list-style-type: none"> ▶ Cool the burn by immerse in cold running water for 10-15 minutes. ▶ Use compresses if running water is not available. ▶ Do NOT apply ice as this may lower body temperature and cause further damage. ▶ Do NOT break blisters or apply butter or ointments; this may cause infection. ▶ Protect burn by cover loosely with sterile, nonstick bandage and secure in place with gauze or tape.

Continued...



	<p>To prevent shock: (unless the person has a head, neck, or leg injury, or it would cause discomfort): Lay the person flat. Elevate feet about 12 inches. Elevate burn area above heart level, if possible. Cover the person with coat or blanket. Seek medical assistance.</p>
Inhalation	<p>For third-degree burns Seek immediate medical or emergency assistance.</p>
Ingestion	<p>In the mean time: Protect burn area cover loosely with sterile, nonstick bandage or, for large areas, a sheet or other material that will not leave lint in wound. Separate burned toes and fingers with dry, sterile dressings. Do not soak burn in water or apply ointments or butter; this may cause infection. To prevent shock see above. For an airway burn, do not place pillow under the person's head when the person is lying down. This can close the airway. Have a person with a facial burn sit up. Check pulse and breathing to monitor for shock until emergency help arrives.</p>
	<p>If dust is inhaled, remove from contaminated area. Encourage patient to blow nose to ensure clear passage of breathing. If irritation or discomfort persists seek medical attention. Immediately give a glass of water. First aid is not generally required. If in doubt, contact a Poisons Information Centre or a doctor.</p>

Most important symptoms and effects, both acute and delayed

See Section 11

Indication of any immediate medical attention and special treatment needed

Treat symptomatically.

SECTION 5 Fire-fighting measures

Extinguishing media

- ▶ Do NOT direct a solid stream of water or foam into burning molten material; this may cause spattering and spread the fire.
- ▶ Foam.
- ▶ Dry chemical powder.
- ▶ BCF (where regulations permit).
- ▶ Carbon dioxide.

Special hazards arising from the substrate or mixture

Fire Incompatibility

- ▶ Avoid contamination with oxidising agents i.e. nitrates, oxidising acids, chlorine bleaches, pool chlorine etc. as ignition may result



SECTION 6 Accidental release measures

Personal precautions, protective equipment and emergency procedures

See section 8

Environmental precautions

See section 12

Methods and material for containment and cleaning up

Minor Spills	<ul style="list-style-type: none">▸ Clean up all spills immediately.▸ Avoid breathing dust and contact with skin and eyes.▸ Wear protective clothing, gloves, safety glasses and dust respirator.▸ Use dry clean up procedures and avoid generating dust.
Major Spills	<p>Moderate hazard.</p> <ul style="list-style-type: none">▸ CAUTION: Advise personnel in area.▸ Alert Emergency Services and tell them location and nature of hazard.▸ Control personal contact by wearing protective clothing.

Personal Protective Equipment advice is contained in Section 8 of the SDS.

See section 12

Methods and material for containment and cleaning up

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Major Spills	<p>Moderate hazard.</p> <ul style="list-style-type: none">▸ CAUTION: Advise personnel in area.▸ Alert Emergency Services and tell them location and nature of hazard.▸ Control personal contact by wearing protective clothing.

Personal Protective Equipment advice is contained in Section 8 of the SDS.



SECTION 7 Handling and storage

Precautions for safe handling

Safe handling	<p>Polyalphaolefin (PAO) dimers require bonding and grounding to prevent static hazards which could cause a fire</p> <ul style="list-style-type: none"> ▸ The greatest potential for injury caused by molten materials occurs during purging of machinery (moulders, extruders etc.) ▸ It is essential that workers in the immediate area of the machinery wear eye and skin protection (such as full face, safety glasses, heat resistant gloves, overalls and safety boots) as protection from thermal burns. ▸ Fumes or vapours emitted from hot melted materials, during converting operations, may condense on overhead metal surfaces or exhaust ducts. The condensate may contain substances which are irritating or toxic. Avoid contact of that material with the skin. Avoid generation of static electricity. Earth all lines and equipment. ▸ Electrostatic discharge may be generated during pumping - this may result in fire. ▸ Ensure electrical continuity by bonding and grounding (earthing) all equipment. ▸ Restrict line velocity during pumping in order to avoid generation of electrostatic discharge (≤ 1 m/sec until fill pipe submerged to twice its diameter, then ≤ 7 m/sec). ▸ Avoid splash filling. ▸ Avoid all personal contact, including inhalation. ▸ Wear protective clothing when risk of exposure occurs. ▸ Use in a well-ventilated area. ▸ Prevent concentration in hollows and sumps. ▸ Organic powders when finely divided over a range of concentrations regardless of particulate size or shape and suspended in air or some other oxidizing medium may form explosive dust-air mixtures and result in a fire or dust explosion (including secondary explosions) Minimise airborne dust and eliminate all ignition sources. Keep away from heat, hot surfaces, sparks, and flame. ▸ Establish good housekeeping practices. ▸ Remove dust accumulations on a regular basis by vacuuming or gentle sweeping to avoid creating dust clouds.
Other information	<ul style="list-style-type: none"> ▸ Store in original containers. ▸ Keep containers securely sealed. ▸ Store in a cool, dry area protected from environmental extremes. ▸ Store away from incompatible materials and foodstuff containers.

Conditions for safe storage, including any incompatibilities

Suitable container	<ul style="list-style-type: none"> ▸ Polyethylene or polypropylene container. ▸ Check all containers are clearly labelled and free from leaks.
Storage incompatibility	<p>Polypropylene is liable to chain degradation from exposure to UV radiation such as that present in sunlight. Oxidation usually occurs at the secondary carbon atom present in every repeat unit. A free radical is formed here, and then reacts further with oxygen, followed by chain scission to yield aldehydes and carboxylic acids. In external applications, it shows up as a network of fine cracks and crazes which become deeper and more severe with time of exposure.</p> <ul style="list-style-type: none"> ▸ Avoid reaction with oxidising agents



X — Must not be stored together
 0 — May be stored together with specific
 preventions + — May be stored together

Note: Depending on other risk factors, compatibility assessment based on the table above may not be relevant to storage situations, particularly where large volumes of dangerous goods are stored and handled. Reference should be made to the Safety Data Sheets for each substance or article and risks assessed accordingly.



SECTION 8 Exposure controls / personal protection

Control parameters

Occupational Exposure Limits (OEL)

INGREDIENT DATA

Source	Ingredient	Material name	TWA	STEL	Peak	Notes
US OSHA Permissible Exposure Limits (PELs) Table Z-3	polyethylene	Inert or Nuisance Dust: Respirable fraction	5 mg/m ³ / 15 mppcf	Not Available	Not Available	Not Available
US OSHA Permissible Exposure Limits (PELs) Table Z-3	polyethylene	Inert or Nuisance Dust: Total Dust	15 mg/m ³ / 50 mppcf	Not Available	Not Available	Not Available
US OSHA Permissible Exposure Limits (PELs) Table Z-1	polyethylene	Particulates Not Otherwise Regulated (PNOR)- Total dust	15 mg/m ³	Not Available	Not Available	Not Available

SECTION 9 Physical and chemical properties

Information on basic physical and chemical properties

Appearance	<p>Fine white, odourless powder; insoluble in water. Insoluble in solvents, but low molecular weight grades may swell in xylene; dissolve in hot xylene. A vinyl polymer made from ethylene. It can be branched or linear. Branched or low-density polyethylene is tough and pliable but not to the same degree as linear polyethylene. Linear or high-density polyethylene has a greater hardness and tensile strength.</p> <p>Polyalphaolefin (PAO) dimers are clear, colorless and odorless liquids at ambient conditions. They do not mix with water. They are not flammable, combustible, or highly reactive.</p> <p>Polyalphaolefins (PAO) dimers are highly branched isoparaffinic polyalphaolefins manufactured by catalytic dimer reaction of 1-decene or 1-dodecene. In addition to the similarity of chemical structures, the physical and health hazard profile of the PAO dimers are also similar. Use may require material be molten.</p>					
Physical state	Divided Solid	Relative density (Water = 1)	0.90-0.94			
Odour	Not Available	Partition coefficient n-octanol / water	Not Available			
Odour threshold	Not Available	Auto-ignition temperature (°C)	Not Applicable			
pH (as supplied)	Not Applicable	Decomposition temperature	300 approx.			
Melting point / freezing point (°C)	100-130	Viscosity (cSt)	Not Applicable			
Initial boiling point and boiling range (°C)	Not Applicable	Molecular weight (g/mol)	2000-20000 range			
Flash point (°C)	260 approx.	Taste	Not Available			
Evaporation rate	Non Volatile	Explosive properties	Not Available			
Flammability	Not Applicable	Oxidising properties	Not Available			
Upper Explosive Limit (%)	Not Applicable	Surface Tension (dyn/cm or mN/m)	Not Applicable			
Lower Explosive Limit (%)	Not Applicable	Volatile Component (%vol)	Negligible			
Vapour pressure (kPa)	Negligible	Gas group	Not Available			
Solubility in water	Immiscible	pH as a solution (%)	Not Applicable			
Vapour density (Air = 1)	Not Applicable	VOC g/L	Not Available			



SECTION 10 Stability and reactivity

Reactivity	See section 7
Chemical stability	<ul style="list-style-type: none"> Unstable in the presence of incompatible materials. Product is considered stable. Hazardous polymerisation will not occur.
Possibility of hazardous reactions	See section 7
Conditions to avoid	See section 7
Incompatible materials	See section 7
Hazardous decomposition products	See section 5

SECTION 11 Toxicological information

Information on toxicological effects

Inhaled	<p>There is some evidence to suggest that the material can cause respiratory irritation in some persons. The body's response to such irritation can cause further lung damage.</p> <p>Processing for an overly long time or processing at overly high temperatures may cause generation and release of highly irritating vapours, which irritate eyes, nose, throat, causing red itchy eyes, coughing, sore throat.</p> <p>Persons with impaired respiratory function, airway diseases and conditions such as emphysema or chronic bronchitis, may incur further disability if excessive concentrations of particulate are inhaled.</p> <p>If prior damage to the circulatory or nervous systems has occurred or if kidney damage has been sustained, proper screenings should be conducted on individuals who may be exposed to further risk if handling and use of the material result in excessive exposures.</p> <p>Inhalation hazard is increased at higher temperatures.</p> <p>Not normally a hazard due to non-volatile nature of product</p> <ul style="list-style-type: none"> Usually handled as molten liquid which requires worker thermal protection and increases hazard of vapour exposure. CAUTION: Vapours may be irritating.
Ingestion	<p>Although ingestion is not thought to produce harmful effects (as classified under EC Directives), the material may still be damaging to the health of the individual, following ingestion, especially where pre-existing organ (e.g. liver, kidney) damage is evident.</p> <p>High molecular weight material; on single acute exposure would be expected to pass through gastrointestinal tract with little change / absorption.</p> <p>Occasionally accumulation of the solid material within the alimentary tract may result in formation of a bezoar (concretion), producing discomfort.</p>
Skin Contact	<p>The material is not thought to produce adverse health effects or skin irritation following contact (as classified by EC Directives using animal models). Nevertheless, good hygiene practice requires that exposure be kept to a minimum and that suitable gloves be used in an occupational setting.</p> <p>Molten material is capable of causing burns.</p> <p>Open cuts, abraded or irritated skin should not be exposed to this material</p>



Eye Entry into the blood-stream, through, for example, cuts, abrasions or lesions, may produce systemic injury with harmful effects. Examine the skin prior to the use of the material and ensure that any external damage is suitably protected.

Chronic Although the material is not thought to be an irritant (as classified by EC Directives), direct contact with the eye may cause transient discomfort characterised by tearing or conjunctival redness (as with windburn). Slight abrasive damage may also result.

There has been some concern that this material can cause cancer or mutations but there is not enough data to make an assessment. Long term exposure to high dust concentrations may cause changes in lung function i.e. pneumoconiosis, caused by particles less than 0.5 micron penetrating and remaining in the lung.

POLYETHYLENE WAX

TOXICITY

dermal (rat) LD50: >2000 mg/kg

Oral(Rat) LD50; >2000 mg/kg

IRRITATION

Not Available

polyethylene

TOXICITY

dermal (rat) LD50: >2000 mg/kg

Oral(Rat) LD50; >2000 mg/kg

IRRITATION

Not Available

Legend:

1. Value obtained from Europe ECHA Registered Substances - Acute toxicity 2. * Value obtained from manufacturer's SDS. Unless otherwise specified data extracted from RTECS - Register of Toxic Effect of chemical Substances

POLYETHYLENE WAX & POLYETHYLENE

polyethylene pyrolyzate

For poly-alpha-olefins (PAOs):

PAOs are highly branched, isoparaffinic chemicals produced by oligomerisation of 1-octene, 1-decene and/or 1-dodecene. The crude polyalphaolefin mixture is then distilled into appropriate product fractions to meet specific viscosity specifications and hydrogenated.

In existing data, there appears to be no data to show that these structural analogs cause health effects. In addition, there is evidence in the literature that alkanes with 30 or more carbon atoms are unlikely to be absorbed when given by mouth.

Inclusion of polyethylene in the diet of rats at 8 g/kg/day did not result in treatment-related effects. Polyethylene implanted into rats and mice has reportedly caused local tumorigenic activity at doses of 33 to 2120 mg/kg, but the relevance to human exposure is not certain. The substance is classified by IARC as Group 3:

NOT classifiable as to its carcinogenicity to humans.

Evidence of carcinogenicity may be inadequate or limited in animal testing.

Acute Toxicity	✗	Carcinogenicity	✗
Skin Irritation/Corrosion	✗	Reproductivity	✗
Serious Eye Damage/Irritation	✗	STOT - Single Exposure	✗
Respiratory or Skin sensitisation	✗	STOT - Repeated Exposure	✗
Mutagenicity	✗	Aspiration Hazard	✗

Legend: ✗ – Data either not available or does not fill the criteria for classification
✔ – Data available to make classification

SECTION 12 Ecological information

Toxicity

POLYETHYLENE WAX	Endpoint	Test Duration (hr)	Species	Value	Source
	Not Available	Not Available	Not Available	Not Available	Not Available
polyethylene	Endpoint	Test Duration (hr)	Species	Value	Source
	Not Available	Not Available	Not Available	Not Available	Not Available



SECTION 13 Disposal considerations

Waste treatment methods

Product / Packaging disposal	<p>Legislation addressing waste disposal requirements may differ by country, state and/ or territory. Each user must refer to laws operating in their area. In some areas, certain wastes must be tracked.</p> <p>A Hierarchy of Controls seems to be common - the user should investigate:</p> <ul style="list-style-type: none"> ▸ Reduction ▸ Reuse ▸ Recycling ▸ Disposal (if all else fails) <p>This material may be recycled if unused, or if it has not been contaminated so as to make it unsuitable for its intended use.</p> <ul style="list-style-type: none"> ▸ DO NOT allow wash water from cleaning or process equipment to enter drains. ▸ It may be necessary to collect all wash water for treatment before disposal. ▸ In all cases disposal to sewer may be subject to local laws and regulations and these should be considered first. ▸ Where in doubt contact the responsible authority.
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SECTION 14 Transport information

Labels Required

Marine Pollutant	NO
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Land transport (DOT): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS

Air transport (ICAO-IATA / DGR): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS

Sea transport (IMDG-Code / GGVSee): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS

Transport in bulk according to Annex II of MARPOL and the IBC code

Not Applicable

Transport in bulk in accordance with MARPOL Annex V and the IMSBC Code

Product name	Group
polyethylene	Not Available

Transport in bulk in accordance with the ICG Code

Product name	Ship Type
polyethylene	Not Available



SECTION 15 Regulatory information

Safety, health and environmental regulations / legislation specific for the substance or mixture

polyethylene is found on the following regulatory lists

International Agency for Research on Cancer (IARC) - Agents Classified by the IARC Monographs

US DOE Temporary Emergency Exposure Limits (TEELs)

US NIOSH Recommended Exposure Limits (RELs)

US OSHA Permissible Exposure Limits (PELs) Table Z-3

US Toxic Substances Control Act (TSCA) - Chemical Substance Inventory

US TSCA Chemical Substance Inventory - Interim List of Active Substances

Federal Regulations

Section 311/312 hazard categories

Flammable (Gases, Aerosols, Liquids, or Solids)

No

SECTION 16 Other information

Version

	Date of Update	Sections Updated
3.1	29/10/2017	Acute Health (inhaled), Acute Health (skin), Appearance, Classification, Disposal, Engineering Control, Environmental, Exposure Standard, Fire Fighter (extinguishing media), Fire Fighter (fire/explosion hazard), First Aid (eye), First Aid (skin), Handling Procedure, Personal Protection (other), Personal Protection (Respirator), Personal Protection (eye), Physical Properties, Storage (storage incompatibility), Storage (storage requirement), Toxicity and Irritation (Other)
4.1	10/10/2019	Acute Health (swallowed), Appearance, CAS Number, Environmental, Use



Other information

Classification of the preparation and its individual components has drawn on official and authoritative sources as well as independent review by the Chemwatch Classification committee using available literature references.

The SDS is a Hazard Communication tool and should be used to assist in the Risk Assessment. Many factors determine whether the reported Hazards are Risks in the workplace or other settings. Risks may be determined by reference to Exposures Scenarios. Scale of use, frequency of use and current or available engineering controls must be considered.

Definitions and abbreviations

PC—TWA: Permissible Concentration-Time Weighted Average
PC—STEL: Permissible Concentration-Short Term Exposure Limit
IARC: International Agency for Research on Cancer
ACGIH: American Conference of Governmental Industrial Hygienists
STEL: Short Term Exposure Limit
TEEL: Temporary Emergency Exposure Limit.
IDLH: Immediately Dangerous to Life or Health Concentrations
ES: Exposure Standard
OSF: Odour Safety Factor
NOAEL :No Observed Adverse Effect Level
LOAEL: Lowest Observed Adverse Effect Level
TLV: Threshold Limit Value
LOD: Limit Of Detection
OTV: Odour Threshold Value
BCF: BioConcentration Factors
BEI: Biological Exposure Index
AIIIC: Australian Inventory of Industrial Chemicals
DSL: Domestic Substances List
NDSL: Non-Domestic Substances List
IECSC: Inventory of Existing Chemical Substance in China
EINECS: European INventory of Existing Commercial chemical Substances
ELINCS: European List of Notified Chemical Substances
NLP: No-Longer Polymers
ENCS: Existing and New Chemical Substances Inventory
KECI: Korea Existing Chemicals Inventory
NZIoC: New Zealand Inventory of Chemicals
PICCS: Philippine Inventory of Chemicals and Chemical Substances
TSCA: Toxic Substances Control Act
TCSI: Taiwan Chemical Substance Inventory
INSQ: Inventario Nacional de Sustancias Químicas
NCI: National Chemical Inventory
FBEPH: Russian Register of Potentially Hazardous Chemical and Biological Substances