



Material Safety Data Sheet

1. Product and company identification

Product name : POLYWAX™ 2000 POLYETHYLENE
™ a trademark of Baker Hughes, Inc.

Supplier : BAKER PETROLITE POLYMERS DIVISION
A Division of Baker Petrolite Corporation
A Baker Hughes Company
12645 W. Airport Blvd.
Sugar Land, TX 77478
For Product Information/MSDSs Call: 800-231-3606
(8:00 a.m.-5:00 p.m. cst, Monday - Friday)

Material Uses : Special: Numerous uses.

Code : 10041504

Validation date : 4/6/2010.

Print date : 4/6/2010.

Version : 4

Responsible name : Global Regulatory Affairs - Telephone 281-276-5400 or 800-231-3606

In case of emergency : CHEMTREC: 800-424-9300 (U.S. 24 hour)
Baker Petrolite: 800-231-3606 (North America 24 hour)
CANUTEC: 613-996-6666 (Canada 24 hours)
CHEMTREC Int'l 01-703-527-3887 (International 24 hour)

2. Hazards identification

Physical state : Solid. [Miniprills.]

Odor : Little or none.

Color : White.

OSHA/HCS status : While this material is not considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200), this MSDS contains valuable information critical to the safe handling and proper use of the product. This MSDS should be retained and available for employees and other users of this product.

Emergency overview : Within the present knowledge of the supplier, this product does not contain any hazardous ingredients in quantities requiring reporting, in accordance with local regulations.

Fine dust clouds may form explosive mixtures with air. Handling and/or processing of this material may generate a dust which can cause mechanical irritation of the eyes, skin, nose and throat. Keep away from heat, sparks and flame. Prevent dust accumulation. Avoid breathing dust. Avoid prolonged contact with eyes, skin and clothing. Use only with adequate ventilation. Keep container tightly closed and sealed until ready for use.

Routes of entry : Dermal contact. Eye contact. Inhalation.

Potential acute health effects

Inhalation : Exposure to airborne concentrations above statutory or recommended exposure limits may cause irritation of the nose, throat and lungs.

Ingestion : No known significant effects or critical hazards.

Skin : No known significant effects or critical hazards.

Eyes : No significant irritation expected other than possible mechanical irritation.

Potential chronic health effects

Chronic effects : Repeated or prolonged inhalation of dust may lead to chronic respiratory irritation.

Over-exposure signs/symptoms

Inhalation : respiratory tract irritation, coughing

2. Hazards identification

Ingestion	: None known.
Skin	: None known.
Eyes	: irritation, redness

See toxicological information (section 11)

3. Composition/information on ingredients

<u>Name</u>	<u>CAS number</u>	<u>%</u>
Ethene homopolymer	9002-88-4	60 - 100

4. First aid measures

Eye contact	: Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical attention if symptoms occur.
Skin contact	: In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse. Clean shoes thoroughly before reuse. Get medical attention if symptoms occur.
Inhalation	: Move exposed person to fresh air. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. Loosen tight clothing such as a collar, tie, belt or waistband. Get medical attention if symptoms occur.
Ingestion	: Wash out mouth with water. Do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Get medical attention if symptoms occur.
Protection of first-aiders	: No action shall be taken involving any personal risk or without suitable training.

5. Fire-fighting measures

Flammability of the product : Fine dust clouds may form explosive mixtures with air.

Extinguishing media

Suitable : Use dry chemical powder.

Not suitable : Do not use water jet.

Special exposure hazards : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool.

Hazardous thermal decomposition products : carbon dioxide, carbon monoxide

Special protective equipment for fire-fighters : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Special remarks on fire hazards : As with most solid particulate organic materials, high concentrations of dusts from this product suspended in air are an explosion hazard in the presence of sparks, flames, and heat. Do not allow dust to accumulate on equipment and surfaces where this product is used. In the National Fire Protection Association (NFPA) Code 499, a "combustible dust" is any finely divided solid material 420 microns or less in diameter that presents a fire or explosion hazard when dispersed in air. Polyethylene is a Group G combustible dust and has a Layer or Cloud Ignition Temperature of 380°C (716°F) [NFPA Code 499]. When there is the potential of a dust explosion in a use location, the proper electrical equipment and installation should be used.

6 . Accidental release measures

Personal precautions : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Shut off all ignition sources. No flares, smoking or flames in hazard area. Avoid breathing dust. Put on appropriate personal protective equipment (see section 8).

Environmental precautions : Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

Methods for cleaning up

Small spill : Move containers from spill area. Vacuum or sweep up material and place in a designated, labeled waste container. Use spark-proof tools and explosion-proof equipment. Dispose of via a licensed waste disposal contractor.

Large spill : Move containers from spill area. Approach release from upwind. Dike spill area and do not allow product to reach sewage system or surface or ground water. Notify any reportable spill to authorities. (See section 12 for environmental risks and 13 for disposal information.) Vacuum or sweep up material and place in a designated, labeled waste container. Avoid creating dusty conditions and prevent wind dispersal. Use spark-proof tools and explosion-proof equipment. Dispose of via a licensed waste disposal contractor. To clean the floor and all objects contaminated by this material, use detergent solution. Note: see section 1 for emergency contact information and section 13 for waste disposal.

7 . Handling and storage

Handling : Put on appropriate personal protective equipment (see section 8). Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Avoid breathing dust. Avoid the creation of dust when handling and avoid all possible sources of ignition (spark or flame). Prevent dust accumulation. Use only with adequate ventilation. Electrical equipment and lighting should be protected to appropriate standards to prevent dust coming into contact with hot surfaces, sparks or other ignition sources.

Storage : Store in accordance with local regulations. Store in a dry, cool and well-ventilated area, away from incompatible materials (see section 10). Eliminate all ignition sources. Separate from oxidizing materials. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.

Additional information

Packaged material (boxes, bags) should be stored in conditions that avoid extremes of temperature. When temperature extremes are avoided, this product has an expiration date of three years from the date of manufacture. The expiration date can be extended for an additional three year interval if the batch is recertified by Baker Petrolite Quality Assurance. When the product is melted for use, care must be taken to avoid overheating the molten wax and causing oxidation of the product.

8 . Exposure controls/personal protection

Occupational exposure limits		TWA (8 hours)			STEL (15 mins)			Ceiling			Notations
Ingredients:	List name	ppm	mg/m ³	Other	ppm	mg/m ³	Other	ppm	mg/m ³	Other	
Ethene homopolymer	US ACGIH	-	10	-	-	-	-	-	-	-	[a]
	US ACGIH	-	3	-	-	-	-	-	-	-	[b]
	US ACGIH	-	5	-	-	-	-	-	-	-	[c]
	US ACGIH	-	15	-	-	-	-	-	-	-	[d]

Form: [a]Inhalable [b]Respirable dust [c]Respirable fraction [d]Total dust

Consult local authorities for acceptable exposure limits.

Only components of this product with established exposure limits appear in the box above.

8 . Exposure controls/personal protection

If OSHA permissible exposure levels are shown above they are the OSHA 1989 levels or are from subsequent OSHA regulatory actions. Although the 1989 levels have been vacated the 11th Circuit Court of Appeals, Baker Hughes recommends that these lower exposure levels be observed as reasonable worker protection.

- Recommended monitoring procedures** : If this product contains ingredients with exposure limits, personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment.
- Engineering measures** : Use only with adequate ventilation. If user operations generate dust, fumes, gas, vapor or mist, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits. Use explosion-proof ventilation equipment.
- 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. Ensure that eyewash stations and safety showers are close to the workstation location. Take off contaminated clothing and wash before re-use.
- Personal protection**
- Respiratory** : Approved/certified disposable particulate dust mask. Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.
- Hands** : Chemical-resistant gloves.
- Eyes** : Wear chemical safety goggles. When transferring material wear face-shield in addition to chemical safety goggles.
- Skin** : Wear long sleeves and other protective clothing to prevent repeated or prolonged skin contact.

9 . Physical and chemical properties

- Physical state** : Solid. [Miniprills.]
- Flash point** : Open cup: >175°C (>347°F) [Cleveland.]
- Auto-ignition temperature** : Not available.
- Flammable limits** : Not available.
- Color** : White.
- Odor** : Little or none.
- pH** : Not available.
- Boiling/condensation point** : Not available.
- Initial Boiling Point** : Not available.
- Melting/freezing point** : 121.1 to 129.4°C (250 to 264.9°F)
- Relative density** : 0.96 to 0.98 (15.6°C)
- Density** : 7.9968 to 8.164 (lbs/gal)
- Vapor density** : Not available.
- Odor threshold** : Not available.
- Evaporation rate** : Not available.
- VOC** : 0 g/l
- Viscosity** : Dynamic (149°C): 45 to 70 cP
- Solubility (Water)** : Insoluble
- Vapor pressure** : Not available.
- Pour Point** : Not available.
- Partition coefficient (LogKow)** : Not available.

10 . Stability and Reactivity

Chemical stability	: The product is stable.
Possibility of hazardous reactions	: Under normal conditions of storage and use, hazardous reactions will not occur.
Hazardous polymerization	: Under normal conditions of storage and use, hazardous polymerization will not occur.
Conditions to avoid	: Avoid the creation of dust when handling and avoid all possible sources of ignition (spark or flame). Take precautionary measures against electrostatic discharges. To avoid fire or explosion, dissipate static electricity during transfer by grounding and bonding containers and equipment before transferring material. Prevent dust accumulation.
Materials to avoid	: Reactive or incompatible with the following materials: oxidizing materials.
Hazardous decomposition products	: Under normal conditions of storage and use, hazardous decomposition products should not be produced.
Conditions of reactivity	: Slightly flammable in the presence of the following materials or conditions: open flames, sparks and static discharge and heat. As with most solid particulate organic materials, high concentrations of dusts from this product suspended in air are an explosion hazard in the presence of sparks, flames, and heat. Do not allow dust to accumulate on equipment and surfaces where this product is used. In the National Fire Protection Association (NFPA) Code 499, a "combustible dust" is any finely divided solid material 420 microns or less in diameter that presents a fire or explosion hazard when dispersed in air. Polyethylene is a Group G combustible dust and has a Layer or Cloud Ignition Temperature of 380°C (716°F) [NFPA Code 499]. When there is the potential of a dust explosion in a use location, the proper electrical equipment and installation should be used.

11 . Toxicological information

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
Ethene homopolymer	LD50 Oral	Rat	>3000 mg/kg	-

Carcinogenicity

Classification

Product/ingredient name	ACGIH	IARC	EPA	NIOSH	NTP	OSHA
Ethene homopolymer	-	3	-	-	-	-

Chronic toxicity Remarks

1) Ethene homopolymer

An ethene homopolymer (polyethylene) is a component of this product. Polyethylene in its solid form is not expected to have any significant toxicological effect, except intestinal blockage if swallowed. The only chronic effects seen in humans has been with exposure to polyethylene pyrolysis products. Workers exposed to these pyrolysis products had symptoms of eye, mucous membrane, and skin irritation, headaches, nausea, coughing, shortness of breath, and flu-like complaints (Robinson et al, 1982), indicative of polymer fume fever. Rats after inhaling polyethylene dust developed mild inflammatory changes in the lungs (Kochetkova et al, 1971). Prolonged inhalation of thermal degradation products from polyethylene caused neurological effects in rats (Zitting & Savolainen, 1979).

Additional information

Testing of similar polyethylene products provided rat oral LD50's of >2,000 mg/kg and >5,000 mg/kg.

12 . Ecological information

Aquatic ecotoxicity

Conclusion/Summary : Not available.

Biodegradability

Conclusion/Summary : Not available.

Additional information

12 . Ecological information

This product would be expected to biodegrade slowly, depending upon the conditions to which it is exposed. Under OECD Method 310D, the biodegradability is less than 25% after five days.

Ecotoxicological data on analogous polymeric materials demonstrates that the homopolymer in this product has a low aquatic toxicity to fish, algae, and daphnia. Under OECD guidelines this product is classed as inherently biodegradable. The product is unlikely to bioaccumulate due to the large polymeric nature of the homopolymer. Classification according to German Umweltbundesamt.de is "nwg".

13 . Disposal considerations

Waste disposal : The generation of waste should be avoided or minimized wherever possible. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe way. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. 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 authority requirements. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

Disposal should be in accordance with applicable regional, national and local laws and regulations.

Refer to Section 7: HANDLING AND STORAGE and Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION for additional handling information and protection of employees.

14 . Transport information

Regulatory information	UN number	Proper shipping name	Classes	PG*	Label	Additional information
DOT Classification	Not regulated.	-	-	-		Remarks If transported in bulk above 100 C (212 F), product must be shipped as "Elevated temperature liquid, n.o.s., 9, UN3257, III"
TDG Classification	Not regulated.	-	-	-		Remarks If transported in bulk above 100 C (212 F), product must be shipped as "Elevated temperature liquid, n.o.s., 9, UN3257, III"
IMDG Class	Not regulated.	-	-	-		-

PG* : Packing group

DOT Reportable Quantity Not applicable.

Marine pollutant Not applicable.

North-America NAERG : Not available.

15 . Regulatory information

- HCS Classification** : Not regulated.
- U.S. Federal regulations** : **United States inventory (TSCA 8b)**: All components are listed or exempted.
SARA 302/304/311/312 extremely hazardous substances: No products were found.
SARA 302/304 emergency planning and notification: No products were found.
SARA 302/304/311/312 hazardous chemicals: No products were found.
SARA 311/312 MSDS distribution - chemical inventory - hazard identification: No products were found.
CERCLA: Hazardous substances.: No products were found.
Clean Water Act (CWA) 307: No products were found.
Clean Water Act (CWA) 311: No products were found.
Clean Air Act (CAA) 112 accidental release prevention: No products were found.
Clean Air Act (CAA) 112 regulated flammable substances: No products were found.
Clean Air Act (CAA) 112 regulated toxic substances: No products were found.

Clean Air Act Section 112(b) Hazardous Air Pollutants (HAPs) : Not listed

United States inventory (TSCA 8b) : All components are listed or exempted.

Canada

- WHMIS (Canada)** : Not controlled under WHMIS (Canada).
Canada (CEPA DSL): : All components are listed or exempted.
Canadian NPRI : None of the components are 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.

EU regulations

- Hazard symbol or symbols** :
Hazard symbol or symbols : Not available.
Risk phrases : This product is not classified according to EU legislation.
Safety phrases : Not applicable.

International regulations

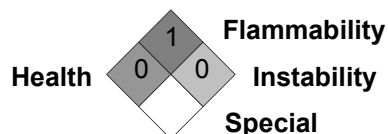
- International lists** : **Australia inventory (AICS)**: All components are listed or exempted.
China inventory (IECSC): All components are listed or exempted.
Japan inventory: All components are listed or exempted.
Korea inventory: All components are listed or exempted.
New Zealand Inventory of Chemicals (NZIoC): Not determined.
Philippines inventory (PICCS): All components are listed or exempted.

Additional information

This product meets the requirements of the following U.S.A. food additive regulations: 21 CFR § 177.1520(c), (2.1), (2.2), (2.3) and others.

16 . Other information

- Label requirements** : Within the present knowledge of the supplier, this product does not contain any hazardous ingredients in quantities requiring reporting, in accordance with local regulations.
- National Fire Protection Association (U.S.A.)** :

16 . Other information

Date of printing : 4/6/2010.

▣ Indicates information that has changed from previously issued version.

Notice to reader

NOTE: The information on this MSDS is based on data which is considered to be accurate. Baker Hughes, however, makes no guarantees or warranty, either expressed or implied of the accuracy or completeness of this information.

The conditions or methods of handling, storage, use and disposal of the product are beyond our control and may be beyond our knowledge. For this and other reasons, we do not assume responsibility and expressly disclaim liability for loss, damage or expense arising out of or in any way connected with the handling, storage, use or disposal of this product.

This MSDS was prepared and is to be used for this product. If the product is used as a component in another product, this MSDS information may not be applicable.

Because it has become common for purchasers of our products to file patents for specific end uses of our products, Baker Hughes advises its customers to research their particular end use for possible intellectual property issues with respect to third party patents.