

1. Product and company identification

Product name	: BPB 59316 SCALE INHIBITOR
Supplier	: Baker Petrolite 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) 281-276-5400
Material Uses	: Special: Boiler Water Treatment. Scale Inhibitor.
Code	: BPB59316
Validation date	: 12/11/2012.
Print date	: 12/11/2012.
Version	: 5
Responsible name	: Global Regulatory Affairs - Telephone 281-276-5400 or 800-231-3606
<u>In case of emergency</u>	: CHEMTREC: 800-424-9300 (U.S. 24 hour) Baker Petrolite: 800-231-3606 (001)281-276-5400 CANUTEC: 613-996-6666 (Canada 24 hours) CHEMTREC Int'l 01-703-527-3887 (International 24 hour)

2. Hazards identification

Physical state	: Liquid.
Odor	: Mild.
Color	: Colorless to light amber.
OSHA/HCS status	: This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).
Emergency overview	: DANGER! CAUSES RESPIRATORY TRACT, EYE AND SKIN BURNS. HARMFUL IF SWALLOWED. CONTAINS MATERIAL THAT MAY CAUSE TARGET ORGAN DAMAGE, BASED ON ANIMAL DATA. Do not breathe vapor or mist. Do not ingest. Do not get in eyes or on skin or clothing. Use only with adequate ventilation. Keep container tightly closed and sealed until ready for use. Wash thoroughly after handling.
Routes of entry	: Dermal contact. Eye contact. Inhalation.
<u>Potential acute health effects</u>	
Inhalation	: Corrosive to the respiratory system.
Ingestion	: Toxic if swallowed. May cause burns to mouth, throat and stomach.
Skin	: Corrosive to the skin. Causes burns.
Eyes	: Corrosive to eyes. Causes burns.
<u>Potential chronic health effects</u>	
Chronic effects	: Contains material that may cause target organ damage, based on animal data.
Target organs	: Contains material which may cause damage to the following organs: lungs, upper respiratory tract, skin, eyes.
<u>Over-exposure signs/symptoms</u>	
Inhalation	: respiratory tract irritation, coughing
Ingestion	: stomach pains
Skin	: pain or irritation, redness, blistering may occur
Eyes	: pain, watering, redness

2. Hazards identification

Medical conditions aggravated by over-exposure : Pre-existing disorders involving any target organs mentioned in this MSDS as being at risk may be aggravated by over-exposure to this product.

See toxicological information (Section 11)

3. Composition/information on ingredients

<u>Name</u>	<u>CAS number</u>	<u>%</u>
Sodium Molybdate	7631-95-0	1 - 5
Sodium hydroxide	1310-73-2	1 - 5

4. First aid measures

- Eye contact** : Get medical attention immediately. Immediately flush the eye(s) continuously with lukewarm, gently flowing water for at least 20-60 minutes while holding the eyelid(s) open.
- Skin contact** : Wash affected area with soap and mild detergent for at least 20 - 60 minutes. Wash clothing before reuse. Clean shoes thoroughly before reuse. Get medical attention immediately.
- 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 immediately.
- 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 immediately.
- Protection of first-aiders** : No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wear suitable protective clothing and gloves. Remove contaminated clothing and shoes.

5. Fire-fighting measures

Flammability of the product : In a fire or if heated, a pressure increase will occur and the container may burst.

Extinguishing media

Suitable : Use an extinguishing agent suitable for the surrounding fire.

Not suitable : None known.

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.

Hazardous thermal decomposition products : carbon dioxide, carbon monoxide, metal oxide/oxides

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.

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. Do not breathe vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. 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.

6 . Accidental release measures

Methods for cleaning up

- Small spill** : Stop leak if without risk. Move containers from spill area. Absorb with an inert material. Dispose of via a licensed waste disposal contractor.
- Large spill** : Stop leak if without risk. 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.) Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see section 13). Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product. Note: see section 1 for emergency contact information and section 13 for waste disposal.

If RQ (Reportable Quantity) is exceeded, report to National Spill Response Office at 1-800-424-8802.

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. Do not get in eyes or on skin or clothing. Do not breathe vapor or mist. Do not ingest. Use only with adequate ventilation. Keep away from acids. Empty containers retain product residue and can be hazardous. Do not reuse container.
- Storage** : Store in accordance with local regulations. Store in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10). Separate from acids. 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.

8 . Exposure controls/personal protection

Occupational exposure limits		TWA (8 hours)			STEL (15 mins)			Ceiling			
Ingredients:	List name	ppm	mg/m ³	Other	ppm	mg/m ³	Other	ppm	mg/m ³	Other	Notations
Sodium Molybdate, as Mo	US ACGIH	-	0.5	-	-	-	-	-	-	-	[a][A]
	OSHA PEL	-	5	-	-	-	-	-	-	-	[A]
	OSHA PEL 1989	-	5	-	-	-	-	-	-	-	[b][A]
Sodium hydroxide	US ACGIH	-	-	-	-	-	-	-	2	-	
	OSHA PEL	-	2	-	-	-	-	-	-	-	
	OSHA PEL 1989	-	-	-	-	-	-	-	2	-	

Form: [a]Respirable fraction; see Appendix C [b]Soluble

Notes: [A]as Mo

Consult local authorities for acceptable exposure limits.

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

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.

8 . Exposure controls/personal protection

- 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 reuse.
- Personal protection**
- Respiratory** : If a risk assessment indicates it is necessary, use a properly fitted, air purifying or supplied air respirator complying with an approved standard. 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: Nitrile or Neoprene gloves.
- Eyes** : Wear chemical safety goggles. When transferring material wear face-shield in addition to chemical safety goggles.
- Skin** : Wear long sleeves and chemical resistant apron to prevent repeated or prolonged skin contact.

9 . Physical and chemical properties

- Physical state** : Liquid.
- Flash point** : Closed cup: >93.4°C (>200.1°F) [TCC]
- Auto-ignition temperature** : Not available.
- Flammable limits** : Not available.
- Color** : Colorless to light amber.
- Odor** : Mild.
- pH** : 12.7
- : Neat-without dilution.
- Boiling/condensation point** : Not available.
- Initial Boiling Point** : Not available.
- Melting/freezing point** : Not available.
- Relative density** : 1.118 (15.6°C)
- Density** : 9.31 (lbs/gal)
- Vapor density** : >1 [Air = 1]
- Odor threshold** : Not available.
- Evaporation rate** : Not available.
- VOC** : Not available.
- Viscosity** : Not available.
- Solubility (Water)** : Soluble
- Vapor pressure** : Not available.
- Pour Point** : -6.67°C (20°F)
- 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** : No specific data.
- Materials to avoid** : Reactive or incompatible with the following materials: oxidizing materials, acids and moisture.

10 . Stability and Reactivity

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.

11 . Toxicological information

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
Sodium Molybdate	LD50 Oral	Rat	4 g/kg	-
	LD50 Oral	Rat	0.25 g/kg	-
	LC50 Inhalation Vapor	Rat	>2080 mg/m ³	4 hours

Carcinogenicity

Classification

Product/ingredient name	ACGIH	IARC	EPA	NIOSH	NTP	OSHA
Sodium Molybdate	A3	-	-	-	-	-

Chronic toxicity Remarks

1) Sodium Molybdate

Sodium molybdate is a component of this product. Abnormal liver function tests have occurred in workers exposed to molybdenum compounds. Biochemical changes may predispose workers to gout (a severe arthritic condition brought on by the bodies inability to metabolize blood uric acid). Anemia (decrease in the number of red blood cells), and hypothyroidism (decreased production of thyroid hormone) may also occur. (MEDITEXT)

2) Sodium hydroxide

Sodium hydroxide is a component of this product. A 63-year-old man exposed to sodium hydroxide mist (as boiling lye solution) for 20 years had severe obstructive airway disease. This is the only known report of potential respiratory effects with chronic occupational sodium hydroxide exposure (Rubin et al, 1992).

Squamous cell carcinomas arise frequently in tissue healing from sodium hydroxide burns (Benedict, 1941; Bigelow, 1953; Gerami et al, 1971; Lansing et al, 1969; Schmidt-Bumler, 1970). These cicatricial (scar or relating to a scar) cancers probably arise as a result of nonspecific irritant action on the tissue and abnormalities in the regenerative process, rather than due to a specific carcinogenic effect of sodium hydroxide. Sodium hydroxide is not regarded as a human carcinogen.

Sodium hydroxide when injected directly into the amniotic fluid (0.001 M) on day 13 of pregnancy was teratogenic in rats, and slightly embryotoxic (Dostal, 1973). Boar sperm incubated directly with sodium hydroxide were destroyed (Okauchi & Ochiai, 1972).

12 . Ecological information

Aquatic ecotoxicity

Product/ingredient name	Result	Species	Exposure
Sodium Molybdate	Acute EC50 3618000 to 3758000 ug/L Fresh water	Crustaceans - Amphipod - Crangonyx pseudogracilis - Adult - 4 mm - 0.2 mg	48 hours
	Acute LC50 >79800 ug/L Marine water	Fish - Striped bass - Morone saxatilis - 1.8 g	96 hours
Sodium hydroxide	Acute EC50 40.38 mg/L Fresh water	Daphnia - Water flea - Ceriodaphnia dubia - Neonate - <24 hours	48 hours
	Acute LC50 33000 to 100000 ug/L Marine water	Crustaceans - Common shrimp, sand shrimp - Crangon crangon - Adult	48 hours

12 . Ecological information

	Acute LC50 125000 ug/L Fresh water	Fish - Western mosquitofish - Gambusia affinis - Adult	96 hours
	Chronic NOEC 56 mg/L Marine water	Fish - Guppy - Poecilia reticulata - Young - 3 to 4 weeks	96 hours
BPB 59316 SCALE INHIBITOR	Acute EC50 890.9 ppm	Daphnia - Ceriodaphnia dubia	48 hours
	Acute LC50 3317.71 ppm	Fish - Fathead minnow	96 hours

Conclusion/Summary : Not available.

Biodegradability

Conclusion/Summary : Not available.

Additional information

The aquatic data listed was done on a similar product.





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	UN3266	CORROSIVE LIQUID, BASIC, INORGANIC, N.O.S. (Contains: Sodium hydroxide)	8	III		-
TDG Classification	UN3266	CORROSIVE LIQUID, BASIC, INORGANIC, N.O.S. (Contains: Sodium hydroxide)	8	III		-
IMDG Class	UN3266	CORROSIVE LIQUID, BASIC, INORGANIC, N.O.S. (Contains: Sodium hydroxide)	8	III		Emergency schedules (EmS) F-A S-B
IATA-DGR Class	UN3266	CORROSIVE LIQUID, BASIC, INORGANIC, N.O.S. (Contains: Sodium hydroxide)	8	III		-

PG* : Packing group

DOT Reportable Quantity Sodium hydroxide, 8951 gal of this product.

Marine pollutant Not applicable.

North-America NAERG : 154

15 . Regulatory information

- HCS Classification** : Toxic material
Corrosive material
Target organ effects
- 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: disodium molybdate; sodium hydroxide
SARA 311/312 MSDS distribution - chemical inventory - hazard identification: BPB 59316 SCALE INHIBITOR: Immediate (acute) health hazard
CERCLA: Hazardous substances.: sodium hydroxide: 1000 lbs. (454 kg);
Clean Water Act (CWA) 307: No products were found.
Clean Water Act (CWA) 311: sodium hydroxide
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)** : Class D-1B: Material causing immediate and serious toxic effects (Toxic).
Class E: Corrosive material
- Canada (CEPA DSL)**: : At least one component is not listed.

16 . Other information

- Label requirements** : CAUSES RESPIRATORY TRACT, EYE AND SKIN BURNS. HARMFUL IF SWALLOWED. CONTAINS MATERIAL THAT MAY CAUSE TARGET ORGAN DAMAGE, BASED ON ANIMAL DATA.
- National Fire Protection Association (U.S.A.)** :



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☑ Indicates information that has changed from previously issued version.

Notice to reader

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