



SAFETY DATA SHEET

Section 1. Identification

Product name : SpectraFloc™ 698 FLOCCULANT
™ a trademark of Baker Hughes Incorporated.
Product code : SPC698

Relevant identified uses of the substance or mixture and uses advised against

Identified uses : Water clarifier.

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Version : 1

Supplier's details : 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

Emergency telephone number (with hours of operation) : 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)

Section 2. Hazards identification

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

Classification of the substance or mixture : Not classified.

GHS label elements

Signal word : No signal word.

Hazard statements : No known significant effects or critical hazards.

Precautionary statements

Prevention : Not applicable.

Response : Not applicable.

Storage : Not applicable.

Disposal : Not applicable.

Hazards not otherwise classified : None known.

Section 3. Composition/information on ingredients

Substance/mixture : Mixture

Ingredient name	%	CAS number
Ammonium chloride	1 - 5	12125-02-9

Section 4. First aid measures

Description of necessary first aid measures

- Eye contact** : Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Get medical attention if irritation occurs.
- Inhalation** : Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur. In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.
- Skin contact** : Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.
- Ingestion** : Wash out mouth with water. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Do not induce vomiting unless directed to do so by medical personnel. Get medical attention if symptoms occur.

Most important symptoms/effects, acute and delayed

Potential acute health effects

- Eye contact** : No known significant effects or critical hazards.
- Inhalation** : Exposure to decomposition products may cause a health hazard. Serious effects may be delayed following exposure.
- Skin contact** : No known significant effects or critical hazards.
- Ingestion** : No known significant effects or critical hazards.

Over-exposure signs/symptoms

- Eye contact** : No specific data.
- Inhalation** : No specific data.
- Skin contact** : No specific data.
- Ingestion** : No specific data.

Indication of immediate medical attention and special treatment needed, if necessary

- Notes to physician** : In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.
- Specific treatments** : No specific treatment.
- Protection of first-aiders** : No action shall be taken involving any personal risk or without suitable training.

See toxicological information (Section 11)

Section 5. Fire-fighting measures

Extinguishing media

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

Unsuitable extinguishing media : None known.

Specific hazards arising from the chemical : In a fire or if heated, a pressure increase will occur and the container may burst.

Hazardous thermal decomposition products : carbon dioxide, carbon monoxide, nitrogen oxides, sulfur oxides, halogenated compounds

Special protective actions for fire-fighters : 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.

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.

Section 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

For non-emergency personnel : 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. Put on appropriate personal protective equipment.

For emergency responders : If specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

Environmental precautions : Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

Methods and materials for containment and cleaning up

Small spill : Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.

Large spill : Stop leak if without risk. Move containers from spill area. 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.) Wash spillages into an effluent treatment plant or proceed as follows. 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. 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.

Section 7. Handling and storage

Precautions for safe handling

- Protective measures** : Put on appropriate personal protective equipment (see Section 8).
- Advice on general occupational hygiene** : 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. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

- Conditions for safe storage, including any incompatibilities** : Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. 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.

Section 8. Exposure controls/personal protection

Control parameters

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
Ammonium chloride	US ACGIH OSHA PEL 1989	-	10	-	-	20	-	-	-	-	[a]
		-	10	-	-	20	-	-	-	-	

Form: [a]Fume

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.

- Appropriate engineering controls** : Good general ventilation should be sufficient to control worker exposure to airborne contaminants.

Individual protection measures

- 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. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.
- Eye/face protection** : Wear chemical safety goggles. When transferring material wear face-shield in addition to chemical safety goggles.
- Hand protection** : Chemical-resistant gloves: Nitrile or Neoprene gloves. 4H gloves.
- Skin protection** : Wear long sleeves to prevent repeated or prolonged skin contact.
- Respiratory protection** : 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.

Section 9. Physical and chemical properties

Appearance

Physical state	: Liquid. [Milky.]
Color	: White.
Odor	: Mild.
Odor threshold	: Not available.
pH	: 3.5 to 4.5 [Conc. (% w/w): 100%] : Neat - without dilution.
Melting/freezing point	: -20°C (-4°F)
Boiling point	: 120°C (248°F)
Initial Boiling Point	: Not available.
Flash point	: Closed cup: >93.4°C (>200.1°F) [PMCC]
Burning time	: Not applicable.
Burning rate	: Not applicable.
Evaporation rate	: Not available.
Flammability (solid, gas)	: Slightly flammable in the presence of the following materials or conditions: open flames, sparks and static discharge and heat.
Lower and upper explosive (flammable) limits	: Not available.
Vapor pressure	: Not available.
Vapor density	: >1 [Air = 1]
Relative density	: 1.15 to 1.21 (15.6°C)
Density	: 9.633 to 10.079 (lbs/gal)
Solubility in water	: Soluble
Partition coefficient: n-octanol/water	: Not available.
Auto-ignition temperature	: Not available.
Decomposition temperature	: Not available.
Viscosity	: Not available.
VOC	: Not available.
Pour Point	: Not available.

Section 10. Stability and reactivity

Reactivity	: No specific test data related to reactivity available for this product or its ingredients.
Chemical stability	: The product is stable.
Possibility of hazardous reactions	: Under normal conditions of storage and use, hazardous reactions will not occur.
Conditions to avoid	: No specific data.
Incompatible materials	: Reactive or incompatible with the following materials: oxidizing materials and acids.
Hazardous decomposition products	: Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Section 11. Toxicological information

Information on toxicological effects

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
Ammonium chloride	LD50 Oral	Rat	1220 mg/kg	-
	LD50 Oral	Rat	1410 mg/kg	-
SpectraFloc™ 698 FLOCCULANT	LD50 Oral	Rat	>7500 mg/kg	-

Irritation/Corrosion

No applicable toxicity data

Sensitization

No applicable toxicity data

Mutagenicity

No applicable toxicity data

Carcinogenicity

No applicable toxicity data

Reproductive toxicity

No applicable toxicity data

Teratogenicity

No applicable toxicity data

Specific target organ toxicity (single exposure)

Not applicable.

Specific target organ toxicity (repeated exposure)

Not applicable.

Aspiration hazard

Not available.

Information on the likely routes of exposure : Routes of entry anticipated: Dermal, Inhalation.

Delayed and immediate effects and also chronic effects from short and long term exposure

Short term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Potential chronic health effects

General : No known significant effects or critical hazards.

Carcinogenicity : No known significant effects or critical hazards.

Mutagenicity : No known significant effects or critical hazards.

Teratogenicity : No known significant effects or critical hazards.

Developmental effects : No known significant effects or critical hazards.

Fertility effects : No known significant effects or critical hazards.

Numerical measures of toxicity

Section 11. Toxicological information

Acute toxicity estimates

Not available.

Additional information

Acrylamide is a component of this product. The major effects of chronic acrylamide exposure are on the nervous system. Exposure to acrylamide for a few days or weeks can produce lassitude (weariness), drowsiness, sleepiness, loss of concentration, nervousness, irritability, loss of body coordination, speech and language disturbances, jerking of the eye, and urinary retention (ACGIH, 1991). Peripheral neuropathy with primarily motor and proprioceptive disturbances (interruptions in the ability of the muscles, tendons, and other internal tissue to receive stimuli), may follow 2 to 3 weeks later (Igisu et al, 1975).

In chronic low-dose exposure, effects are predominantly sensorimotor (mixed bed fibers containing sensory and motor nerves) and proprioceptive neuropathies (interruptions in the nerves ability to receive stimuli) with loss of deep tendon reflexes, muscle weakness and wasting, distal extremity numbness, paresthesias (abnormal burning, pricking, tickling or tingling), foot drop, and persistent ataxia (Auld & Bedwell, 1967; Garland & Patterson, 1967; Fullerton, 1969; Satchell & McLeod, 1981). In severe cases, residual ataxia, loss of reflexes, distal extremity weakness, and sensory disturbances may remain (Donovan & Pearson, 1987; Fullerton, 1969). Persons exposed for more than 22 weeks showed little recovery in peripheral neural function (outer neurons) after one year (Cavigneaux & Cabasson, 1972; Kesson et al, 1977; He et al, 1989). Rats and hens exposed to 12, 25, or 50 mg/kg of acrylamide 3 times per week for 3 weeks developed ataxia (staggering gait). Both peripheral and central nervous system damage were seen in rats, while hens developed only peripheral nerve lesions (Jortner & Ehrich, 1993).

In a two year study in rats where acrylamide was administered in the drinking water, an increased incidence of scrotal mesotheliomas (a rare abnormal increase in tissue growth in the scrotum), central nervous system tumors, thyroid tumors and tumors at other sites were described.

Acrylamide has been reported to be genotoxic in many test systems. Acrylamide inhibited DNA synthesis in rat cells in vitro (RTECS, 1996). Acrylamide induced chromosome aberrations in mice in vivo, in mouse lymphocytes and hamster lung cells, and in cultured human lymphocytes (white blood cells) (RTECS, 1996; HSDB, 1996). Sister chromatid exchanges were seen in rats and mice in vivo, and in hamster lung cells (RTECS, 1996).

IARC has classified acrylamide as a Group 2A carcinogen [probable human carcinogen (human evidence is inadequate, animal evidence is sufficient)]. NTP has classified acrylamide as a suspect carcinogen, and OSHA has classified acrylamide as a Group 2A (possible select carcinogen), upgraded from a Group 2B, based on a study conducted in 1994. (LOLI)

Section 12. Ecological information

Toxicity

Product/ingredient name	Result	Species	Exposure
Ammonium chloride	Acute EC50 0.07 mg/l Marine water	Algae - Hormosira banksii	72 hours
	Acute EC50 0.1 mg/l Fresh water	Crustaceans - Cypris subglobosa	48 hours
	Acute LC50 390 µg/l Fresh water	Daphnia - Daphnia magna	48 hours
	Acute LC50 80 µg/l Fresh water	Fish - Oncorhynchus mykiss	96 hours
	Chronic NOEC 0.6 mg/l Marine water	Algae - Entomoneis punctulata	72 hours
	Chronic NOEC 330 µg/l Fresh water	Crustaceans - Crangonyx sp.	21 days
	Chronic NOEC 19.66 mg/l Fresh water	Daphnia - Daphnia magna	21 days
	Chronic NOEC 0.006 mg/l Fresh water	Fish - Ictalurus punctatus	30 days
	Acute EC50 88 mg/l	Daphnia	48 hours
	SpectraFloc™ 698 FLOCCULANT	Acute LC50 52 mg/l	Daphnia
Acute LC50 28 mg/l		Fish	96 hours
Acute LC50 7.9 mg/l		Fish	96 hours

Section 12. Ecological information

Persistence and degradability


Not available.

Other adverse effects : No known significant effects or critical hazards.

Section 13. Disposal considerations

Disposal methods : The generation of waste should be avoided or minimized wherever possible. 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. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Empty containers or liners may retain some product residues. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

Section 14. Transport information

	DOT Classification	TDG Classification	IMDG	IATA
UN number	UN3082	Not regulated.	Not regulated.	Not regulated.
UN proper shipping name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Contains: Ammonium chloride)	-	-	-
Transport hazard class(es)	9 	-	-	-
Packing group	III	-	-	-
Environmental hazards	Yes.	No.	No.	No.
Additional information	Remarks This material is Not Regulated if transported in a package that does not meet or exceed the Reportable Quantity (RQ).	-	-	-

Special precautions for user : **Transport within user's premises:** always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

Section 14. Transport information

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code : Not available.

DOT Reportable Quantity : Ammonium chloride, 16910 gal of this product.

Marine pollutant : Not available.

North-America NAERG : 171

Section 15. Regulatory information

U.S. Federal regulations : TSCA 12(b) one-time export: No products were found.
 TSCA 12(b) annual export notification: No products were found.
 United States inventory (TSCA 8b): All components are listed or exempted.
 Clean Water Act (CWA) 307: No products were found.
 Clean Water Act (CWA) 311: Ammonium chloride

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

SARA 302/304 : No products were found.

SARA 311/312

Classification : Not applicable.

SARA 313

	Product name	CAS number	%
Supplier notification	Ammonium sulfate	7783-20-2	10 - 20
	Ammonium chloride	12125-02-9	1 - 5

Canada

Canada (CEPA DSL): : All components are listed or exempted.

Section 16. Other information**National Fire Protection Association (U.S.A.)****History**

Date of printing : 1/23/2015.

☑ 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.

Section 16. Other information

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.