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MSDS No. IM.3.1.1.A

Section 01 - Product Identification

IDENTITY: *As Used on Label and List:* **AQUAFIN-PM-3811**
Product Use Description: **Component – B (powder hardener)**
Injection resin

AQUAFIN, INC.
 505 BLUE BALL RD. #160
 ELKTON, MD 21921

24 hr Emergency Phone: Chem-Tel (800) 255-3924
 Information Phone No. (410) 392-2300

Section 02 - Composition/Information on Hazardous Ingredients

Hazardous Components	CAS No.	Wt. %	EC No.	EC Class
Sodium Persulfate	7775-27-1	>99	231-892-1	Xn-O; R8-R22-R36/37/38-R42/43

Section 03 - Hazards Identification

(HMIS-Rating: 0 = Minimal; 1 = Slight; 2 = Moderate; 3 = Serious; 4 = Severe; * = Chronic)
 (J = Safety goggles, gloves, apron & combination dust & vapor respirator)

(NFPA-Rating: 0 = Insignificant; 1 = Slight; 2 = Moderate; 3 = High; 4 = Extreme; OX = Oxidizer)

	HMIS® - Rating
HEALTH	1
FLAMMABILITY	0
REACTIVITY	1
Personal Protection (PPE)	J

	NFPA® - Rating
HEALTH	1
FLAMMABILITY	0
REACTIVITY	1
Special	OX

Emergency Overview: White, odorless, crystals. Oxidizer. Decomposes in storage under conditions of moisture (water/water vapor) and/or excessive heat causing release of oxides of sulfur and oxygen that supports combustion. Decomposition could form a high temperature melt. See Section 10 ("Stability and Reactivity").

Potential Health Effects: Airborne persulfate dust may be irritating to eyes, nose, lungs, throat and skin upon contact. Exposure to high levels of persulfate dust may cause difficulty in breathing in sensitive persons.

Section 04 – First Aid Measures

- Inhalation:** Remove to fresh air. If breathing difficulty or discomfort occurs and persists, contact a medical doctor.
- Ingestion:** Rinse mouth with water. Dilute by giving 1 or 2 glasses of water. Do not induce vomiting. Never give anything by mouth to an unconscious person. See a medical doctor immediately.
- Skin Contact:** Wash with plenty of soap and water. Get medical attention if irritation occurs and persists.
- Eye Contact:** Flush with plenty of water. Get medical attention if irritation occurs and persists.

Notes to physician: This product has low oral toxicity and is not irritating to the eyes and skin. Flooding of exposed areas with water is suggested. For gastric lavage or emesis induction, consider the possible aggravation of esophageal injury, and the expected absence of system effects. Treatment is controlled removal of exposure followed by symptomatic and supportive care.

Section 05 – Fire Fighting Measures

Extinguishing Media: Deluge with water.
Fire / Explosion Hazards: Product is non-combustible. On decomposition releases oxygen which may intensify fire. Presence of water accelerates decomposition.
Fire Fighting Procedures: Do not use carbon dioxide or other gas filled fire extinguishers; they will have no effect on decomposing persulfates. Wear full protective clothing and self-contained breathing apparatus.
Flammable Limits: Non-combustible
Sensitivity to Impact: No data available
Sensitivity to Static Discharge: Not available

Section 06 - Accidental Release Measures

Release Notes: Spilled material should be collected and put in approved DOT container and isolated for disposal. Isolated material should be monitored for signs of decomposition (fuming/smoking). If spilled material is wet, dissolve with large quantity of water and dispose as a hazardous waste. All disposals should be carried out according to regulatory agencies procedures.

Section 07 – Handling and Storage

Handling: Use adequate ventilation when transferring product from bags or drums. Wear respiratory protection if ventilation is inadequate or not available. Use eye and skin protection. Use clean plastic or stainless steel scoops only.
Storage: Store (unopened) in a cool, clean, dry place away from point sources of heat, e.g. radiant heaters or steam pipes. Use first in, first out storage system. Avoid contamination of opened product. In case of fire or decomposition (fuming/smoking) deluge with plenty of water to control decomposition. For storage, refer to NFPA Bulletin 430 on storage of liquid and solid oxidizing materials.
Comments: Ventilation: Provide mechanical general and/or local exhaust ventilation to prevent release of dust into work environment. Spills should be collected into suitable containers to prevent dispersion into the air.

Section 08 – Exposure Controls / Personal Protection

Product	Exposure Limits
Sodium Persulfate	ACGIH TWA: 0.1 mg/m ³ (TWA)

Engineering Controls: Provide mechanical local general room ventilation to prevent release of dust into the work environment. Remove contaminated clothing immediately and wash before reuse.
Respiratory Protection: Use approved dust respirator when airborne dust is expected.
Skin Protection: Normal work clothes. Rubber or neoprene footwear.
Hand Protection: Rubber or neoprene gloves. Thoroughly wash the outside of gloves with soap and water prior to removal. Inspect regularly for leaks.
Eye & Face Protection: Use cup type chemical goggles. Full face shield may be used.

Section 09 – Physical and Chemical Properties

Physical state:	Powder
Odor:	None
Appearance:	White crystals
Autoignition Temperature:	Not applicable. No evidence of combustion up to 800 °C. Decomposition will occur upon heating.
Boiling Point:	Not applicable
Coefficient of Oil / Water:	Not applicable
Density / Weight per Volume:	Not available
Evaporation Rate:	Not applicable (Butyl Acetate = 1)
Flash Point:	Non-combustible
Melting Point:	Decomposes
Odor Threshold:	Not applicable
Oxidizing Properties:	Oxidizer
Percent Volatile:	Not applicable
pH:	typically 5.0 - 7.0 @ 25 °C (1% solution)
Solubility in Water:	73 % @ 25 °C (by wt.)
Specific Gravity:	2.6 (H ₂ O=1)
Vapor Density:	Not applicable (Air = 1)
Vapor Pressure:	Not applicable

Section 10 – Stability and Reactivity

Stability:	Stable (becomes unstable in presence of heat, moisture and/or contamination).
Conditions to Avoid:	Heat, moisture and contamination.
Hazardous Polymerization:	Will not occur
Incompatibilities:	Acids, alkalis, halides (fluorides, chlorides, bromides and iodides), combustible materials, most metals and heavy metals, oxidizable materials, other oxidizers, reducing agents, cleaners, and organic or carbon containing compounds. Contact with incompatible materials can result in a material decomposition or other uncontrolled reactions.
Hazardous Decomposition Products:	Oxygen that supports combustion and oxides of sulfur.
Comments:	Precautionary Statement: Use of persulfates in chemical reactions requires appropriate precautions and design considerations for pressure and thermal relief. Decomposing persulfates will evolve large volumes of gas and/or vapor, can accelerate exponentially with heat generation, and create significant and hazardous pressures if contained and not properly controlled or mitigated. Use with alcohols in the presence of water has been demonstrated to generate conditions that require rigorous adherence to process safety methods and standards to prevent escalation to an uncontrolled reaction.

Section 11 – Toxicological Information

Eye Effects:	Non-irritating (rabbit) [FMC Ref. ICG/T-79.029]
Skin effects:	Non-irritating (rabbit) [fmc ref. lcg/t-79.029]
Dermal Id₅₀:	> 10 g/kg [fmc ref. lcg/t-79.029]
Oral Id₅₀:	895 mg/kg (rat) [fmc ref. lcg/t-79.029]
Inhalation Ic₅₀:	5.1 mg/l (rat) [fmc ref. I95-2017]
Sensitization:	May be sensitizing to allergic persons. [fmc ref. lcg/t-79.029]
Target organs:	Eyes, skin, respiratory passages
Acute effects	
From overexposure:	Dust may be harmful and irritating. May be harmful if swallowed.
Chronic effects	
from overexposure:	Sensitive persons may develop dermatitis and asthma [Respiration 38:144, 1979]. Groups of male and female rats were fed 0, 300 or 3000 ppm sodium persulfate in the diet for 13 weeks, followed by 5000 ppm for 5 weeks. Microscopic examination of tissues revealed some injury to the gastrointestinal tract at the high dose (3000 ppm) only. This effect is not unexpected for an oxidizer at high concentrations. [Ref. FMC I90-1151, Toxicologist 1:149, 1981].

Carcinogenicity:

NTP:	Not listed
IARC:	Not listed
OSHA:	Not listed
OTHER:	ACGIH: Not listed

Section 12 – Ecological Information

Ecotoxicological Information:

Bluegill sunfish, 96-hour LC ₅₀ = 771 mg/L [FMC Study I92-1250]
Rainbow trout, 96-hour LC ₅₀ = 163 mg/L [FMC Study I92-1251]
Daphnia, 48-hour LC ₅₀ = 133 mg/L [FMC Study I92-1252]
Grass shrimp, 96-hour LC ₅₀ = 519 mg/L [FMC Study I92-1253]

Chemical Fate Information: Biodegradability does not apply to inorganic substances.

Section 13 – Disposal Considerations

Disposal: Dispose as a hazardous waste in accordance with local, state and federal regulatory agencies.

Section 14 – Transport Information

U.S. DEPARTMENT OF TRANSPORTATION (DOT)

Proper Shipping Name:	Sodium Persulfate
Primary Hazard Class / Division:	5.1 (Oxidizer)
UN/NA Number:	UN 1505
Packing Group:	III
Labels(s):	5.1 (Oxidizer)
Placard(s):	5.1 (Oxidizer)
Marking(s):	Sodium Persulfate, UN 1505
Additional Information:	Hazardous Substance/RQ: Not applicable

International Maritime Dangerous Goods (IMDG)

Proper Shipping Name: Sodium Persulfate

International Civil Aviation Organization (ICAO) / International Air Transport Association (IATA)

Proper Shipping Name: Sodium Persulfate

Other Information:

Protect from physical damage. Do not store near acids, moisture or heat.

Section 15 – Regulatory Information

UNITED STATES

Sara Title III (Superfund Amendments and Reauthorization Act)

- **Section 302 Extremely Hazardous Substances (40 cfr 355, appendix a):**
Not applicable
- **Section 311 Hazard Categories (40 CFR 370):**
Fire Hazard, Immediate (Acute) Health Hazard
- **Section 312 Threshold Planning Quantity (40 CFR 370):**
The Threshold Planning Quantity (TPQ) for this product, if treated as a mixture, is 10,000 lbs; however, this product contains the following ingredients with a TPQ of less than 10,000 lbs.:
None
- **Section 313 Reportable Ingredients (40 CFR 372):**
There are no ingredients in this product, which are subject to Section 313 reporting requirements.

CERCLA (Comprehensive Environmental Response Compensation and Liability Act)

- **CERCLA Designation & Reportable Quantities (RQ) (40 CFR 302.4):**
Unlisted, RQ = 100 lbs., Ignitability

TSCA (Toxic Substance Control Act)

- **TSCA Inventory Status (40 CFR 710):**
All components are listed or exempt.

Resource Conservation and Recovery Act (RCRA)

- **RCRA Identification of Hazardous Waste (40 CFR 261):**
Waste Number: D001

Hazard and Risk Phrase Descriptions:

EC Symbols: Xn (Harmful)
O (Oxidizer)

EC Risk Phrases: R8 (Contact with combustible material may cause fire)
R22 (Harmful if swallowed.)
R36/37/38 (Irritating to eyes, respiratory system and skin.)
R42/43 (May cause sensitization by inhalation or by skin contact.)

Section 16 – Other Information

We believe the statements, technical information and recommendations contained herein are reliable, but they are given without warranty or guarantee of any kind, expressed or implied, and we assume no responsibility for any loss, damage, or expense, direct or consequential, arising out of their use.

END OF MSDS

(March 26, 2010)