Section 01 - Product Information

Identification of the company:	AZ Electronic Materials USA Corp. 70 Meister Avenue Somerville, NJ 08876 Telephone No.: 800-515-4164 **Information on the substance/preparation** Product Safety: 908-429-3562 **Emergency Tel. number:** 800-424-9300 CHEMTREC

Trade name: **AZ AQUATAR-III 45-US (JP)**

Section 02 - Composition information

Hazardous ingredients:

Chemical Name	CAS-no. (Trade secret no.)	Concentration [%]
Fluoroalkylsulfonic acid salt	67829000004-5572P	< 5.00
Fluoroalkylsulfonic acid	67829000004-5571P	< 1.00

Section 03 - Hazardous identification

Emergency overview: Clear, colorless liquid., Noncombustible., No odor., May produce systemic or organ effects with repeated or excessive exposure., May be irritating and/or toxic., May accumulate in the body and damage internal organs, especially the liver, with repeated exposure., Water soluble.

Expected route of entry

Skin contact: Contact with liquid and mist.
Ingestion: no
Inhalation: Inhalation of mist.
Eye contact: Contact with liquid and mist.
Skin absorption: no

Health effects of exposure:

Component information:

Fluoroalkylsulfonic acid and salt
Due to the low pH and the current toxicity data for the perfluorooctanesulfonic acid (PFOS) salts, this product is expected to be irritating to the skin, and eyes. Mists may irritate the nose, throat, and/or lungs and result in accumulation of toxic quantities of material with repeated exposure. While oral irritation is not likely, amounts conservatively estimated at 4 oz can be fatal if swallowed. Experimental animal testing for reproductive and birth effects caused death of offspring. Long term animal tesing have resulted in liver toxicity and an increase in liver and thyroid tumors in rats. Carcinogenic potential in humans is questionable. Target organs include the eye (irritation), reproductive system (offspring) and the liver. See Toxicological Information (Section 11). Potential environmental effects: Due to PFOS components, this material is expected to be persistent in the environment. May cause long-term effects in the aquatic environment, and is toxic to aquatic organisms. See Ecolological Information (Section 12).

Listed carcinogen: IARC: NO NTP: NO OSHA: NO

HMIS:
Health: 2 Flammability: 0 Reactivity: 0 Personal protection: X

NFPA:
Health: 2 Flammability: 0 Reactivity: 0 Special notice: NONE

Section 04 - First aid measures

After inhalation: Remove victim to fresh air.
Consult physician if irritation occurs.

After contact with skin: Consult physician if exposure is extensive or if irritation occurs.
Immediately remove contaminated clothing and wash affected area thoroughly with soap and water.

After contact with eyes: Flush thoroughly with water for 15 minutes. Get immediate medical help.

After ingestion: If person is conscious, give water or milk to dilute stomach contents.
Never give anything by mouth to an unconscious person.
Consult physician.
Do not induce vomiting.

Section 05 - Fire fighting measures

Flash point: Water-based material with low level of combustible solid content., Compatible with extinguishing agents.

Special hazards from the substance itself, its combustion products or from its vapours: In case of fires, hazardous combustion gases are formed:
Carbon monoxide (CO)

Special hazards from the substance itself, its combustion products or from its vapours:	Carbon dioxide (CO2) Nitrous gases (NOx) Sulphur oxides Hydrogen fluoride (HF)

Section 06 - Accidental release measures

Steps to be taken in case of spill or leak:	Wearing appropriate personal protective equipment, contain spill, collect onto inert absorbent, and place in a suitable container. Rinse residual with water.

Section 07 - Handling and Storage

Advice on safe handling:

Use only with adequate ventilation and proper protective eyewear, gloves, and clothing.
Keep container closed.
Avoid contact with skin, eyes, and clothing.

Further information for storage conditions:

Store at appropriate temperature. See label for details.
Store in original container.
Keep from freezing.

Section 08 - Exposure Control / personal protection

Respiratory protection:	Where mist is present, provide local ventilation or a respirator certified for mist by NIOSH.
Hand protection:	Rubber gloves.
Eye protection:	Safety eyewear to protect against splashes.
Body protection:	Clothing suitable to prevent skin contact.
Additional advice on system design:	Where mist is present, provide local exhaust ventilation or a respirator certified for mist by NIOSH.

Section 09 - Physical and chemical properties

Form:	Liquid
Color:	Clear, colorless to pale yellow
Odor:	No odor.

pH value:	2
Solubility in water:	soluble
Density:	1.016 g/cm3
Boiling point:	100 °C
Vapor pressure:	not applicable
Loss on drying:	96 %

Section 10 - Stability and reactivity

Hazardous reactions:	Stable.
Hazardous polymerization:	Will not occur.
Conditions to avoid:	Avoid contact with alkaline materials.

Section 11 - Toxiclogical information

Further information: Oral or Dermal Repeated Dose Exposure:, No Data., In repeated dose oral studies in rats and monkeys, this material causes disturbances in lipid metabolism and adverse effects on the liver at doses above 0.1 mg/kg/day (rats) or 0.15 mg/kg/day (monkeys). At 0.75 mg/kg/day, two of 12 monkeys died during a six-month oral study from effects related to exposure. Other adverse effects reported in experimental animals include weight loss, loss of appetite, lethargy,and neurological, pancreatic, adrenal, and hematologic effects., PFOSA is absorbed through the skin. It is not genotoxic and carcinogenicity studies are in progress. PFOSA has a long half-life in the body and accumulates during repeated exposures., Data from exposed individuals shows that similar materials accumulate in the human body after repeated exposure. No adverse effects have been reported in humans from exposure No adverse effects are anticipated from the use of this product as directed., Reproductive and developmental toxicity data incidate that there are no adverse effects at a dose which does not affect the pregnant dam. However, material does appear to cross the placenta and affect the fetus at high dose levels., Teratogenic effects: No data. A similar material, PFOS was not teratogenic in rats or rabbits. The maternal NOELs were 1.0 mg/kg/day (rats); 0.1 mg/kg/day (rabbits). The fetal NOELs were 1.0 mg/kg/day for both rats and rabbits., Reproductive Effects: No data. PFOSA was tested in a two-generation oral rat study. No effects on

offspring occurred in the absence of maternal toxicity. However, excess perinatal mortality was reported at dose levels of 1.6 mg/kg/day. The NOEL in this study was 0.1 mg/kg/day.

Fluoroalkylsulfonic acid and salt
Acute oral toxicity: LD50 rat
251 mg/kg

Fluoroalkylsulfonic acid and salt
Acute inhalation toxicity LC50 rat
5.2 mg/l

Fluoroalkylsulfonic acid and salt
Skin irritation: rabbit
Method: Draize Test
non-irritant

Fluoroalkylsulfonic acid and salt
Eye irritation: rabbit eye
Method: Draize Method
irritant

Fluoroalkylsulfonic acid and salt
Further information: Test type: other
Evidence from animal testing show that harmful efffects to human fertility is possible.

Fluoroalkylsulfonic acid and salt
Further information: Test type: adsorption
Can be absorbed through skin, and may remain in the body for a long time.

Section 12 - Ecological information

Further ecological information: Other salts of the fluorinated parent compound are known to be toxic to fish and daphnia with EC50 values in the range of 10 to 200 ppm. It is anticipated that this material would have similar aquatic toxicity. This material is expected to biodegrade poorly.

Fluoroalkylsulfonic acid and salt
Fish toxicity: LC50 (Fathead minnow)
4.7 mg/l (Li salt)
Exposure time: 96 h

Fluoroalkylsulfonic acid and salt
Fish toxicity: NOEC (Fathead minnow)
0.3 mg/l (42-day, K salt)

Fluoroalkylsulfonic acid and salt
Toxicity of aquatic invertebrates: EC50 (Daphnia magna)
27 mg/l (K salt)
Exposure time: 48 h

Fluoroalkylsulfonic acid and salt
Toxicity of aquatic invertebrates: EC50 (Mysidopsis bahia)
3.6 mg/l (K salt)
Exposure time: 96 h

Fluoroalkylsulfonic acid and salt
Further ecological information: The product should not be allowed to reach either sewage waters or water purification plants.

Section 13 - Disposal considerations

Product: Consult local, state, and federal regulations.
This product would be considered a hazardous waste under RCRA due to low pH unless neutralized prior to disposal.
Contains 2% organically bound fluorine; if incinerated, operator must be advised.

Section 14 - Transport information

Land transport

- *DOT:*
  Not restricted

Sea transport

- *IMDG:*
  Not restricted

Air transport

- *ICAO/IATA-DGR:*
  Not restricted

Section 15 - Regulatory information

TSCA Status:	One or more components of this product are not listed on the TSCA Inventory. The components, however, are covered by Low Volume Exemptions (LVEs). These LVE-based products may only be used in conventional photolithographic processes consistent with their design. For any applications outside of this intended purpose, contact the vendor first.
SARA (section 311/312):	Reactive hazard: no Pressure hazard: no Fire hazard: no Immediate/acute: yes Delayed/chronic: no
SARA 313 information:	This product is not subject to SARA Title III Section 313 reporting requirements under 40 CFR 372.

Section 16 - Other information

Label information

CAUTION!

Dilute acidic aqueous solution. May cause irritation to skin, eyes and mucous membranes.

Avoid contact with skin, eyes, and clothing. Use only with adequate ventilation, and proper protective eyewear, gloves, and clothing. Wash thoroughly after handling. Keep container closed.

In case of contact, flush eyes with plenty of water for 15 minutes. Get medical attention immediately. Flush affected skin areas with water, and wash with mild soap and water. Remove contaminated clothing. If ingested, give water or milk to dilute stomach contents. Never give anything by mouth to an unconscious person.

If spilled, wear protective clothing, absorb with inert material, collect and place in a chemical waste container. Rinse residue with water.

Keep sealed in original container. Avoid freezing and direct sunlight. Product should be stored > 32 F (0 C). Empty container may contain harmful residue.

The solvent in this product is not photochemically reactive per Rule 102 of the California South Coast Air Quality Management District.

This information is supplied under the OSHA Hazard Communication Standard, 29 CFR 1910.1200, and is offered in good faith based on data available to us that we believe to be true and accurate. The recommended industrial hygiene and safe handling procedures are believed to be generally applicable to the material. However, each user should review these recommendations in the specific context of the intended use and determine whether they are appropriate for that use.

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