



SAFETY DATA SHEET

AM-11

Issue Date: 01 Jan 2023

Revision Date: N/A

PRODUCT IDENTIFICATION

Company Product Name: AM-11

Other/Generic Names: Acidic TFC Type RO Membrane Cleaner.

Product Use and Restrictions on Use Membrane Cleaner.

Supplier: Applied Membranes, Inc.
2450 Business Park Dr
Vista, CA 92081

For More Information Call:
(Monday-Friday, 8:00am-5:00pm) (760) 727-3711

For Emergency Call: For Chemical Emergency, Spill Leak Fire Exposure or Accident - Call CHEMTREC Day or Night DOMESTIC NORTH AMERICA 800-424-9300 INTERNATIONAL, CALL 703-527-3887 (collect calls accepted)

HAZARDS IDENTIFICATION

Hazard Statements

- Health, Skin Corrosion/Irritation: H315 CAUSES SKIN IRRITATION.(CAT:2)
- Health, Serious Eye Damage/Eye Irritation:H319 CAUSES SERIOUS EYE IRRITATION. (CAT:2A)
- Health, Acute Toxicity, Inhalation: H332 HARMFUL IF INHALED.(CAT:4)

Label Element



Precautionary Statement

- Do not breathe dust/fume/gas/mist/vapors/spray.
- Do not get in eyes, on skin, or on clothing.
- Wear protective gloves/protective clothing/eye protection/face protection.
- IF IN EYES: Rinse cautiously with water for several minutes. Remove contact Lenses, if present and easy to do. Continue rinsing.



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- IF ON SKIN: Wash with plenty of soap and water.
- IF SKIN irritation occurs: Get medical advice/attention.

COMPOSITION/INFORMATION ON INGREDIENT

<u>Ingredient Name</u>	<u>CAS Number</u>	<u>Weight %</u>
AM-11	77-92-9	100%

Trace ingredients (if any) are present in < 1% concentration, (< 0.1% for potential carcinogens, reproductive toxins, respiratory tract mutagens, and sensitizers). None of the trace ingredients contribute significant additional hazards at the concentrations that may be present in this product. All pertinent hazard information has been provided in this document, per the requirements of the Federal Occupational Safety and Health Administration Standard (29 CFR 1910.1200), U.S. State equivalents, and Canadian Hazardous Materials Identification System Standard (CPR 4).

FIRST AID MEASURES

SKIN:	In case of contact with skin immediately remove contaminated clothing. Wash thoroughly with plenty of water for at least 15 minutes. Wash contaminated clothing before reuse.
EYES:	For eyes, flush with plenty of water for 15 minutes & get medical attention.
INHALATION:	After high vapor exposure, remove to fresh air. If breathing is difficult, give oxygen. If breathing has stopped, trained personnel should immediately begin artificial respiration. If the heart has stopped, trained personnel should immediately begin cardiopulmonary resuscitation (CPR).
INGESTION:	Only induce vomiting if directed to do so by medical personnel. Do NOT give liquids to an unconscious or convulsing person.
MOST IMPORTANT SYMPTOMS/EFFECTS, ACUTE AND DELAYED:	See Section on Toxicological Information for Symptoms/Effects (acute & chronic).



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FIRE FIGHTING MEASURES

**FIRE & EXPLOSION
PREVENTIVE MEASURES:**

Isolate from extreme heat and open flames. Take precautions against static discharge.

**SUITABLE (AND
UNSUITABLE)
EXTINGUISHING MEDIA:**

Use water spray, dry chemical, alcohol foam or carbon dioxide.

**SPECIFIC HAZARDS OF
CHEMICAL & HAZARDOUS
COMBUSTION:**

Combustible Dust Hazard!

Isolate from oxidizers, heat, & open flame. Take precautions against static discharge. Closed containers may explode if exposed to extreme heat. Applying to hot surfaces requires special precautions.

**SPECIAL PROTECTIVE
EQUIPMENT &
PRECAUTIONS FOR
FIREFIGHTERS:**

Water spray may be ineffective on fire but can protect fire-fighters & cool closed containers. Use fog nozzles if water is used (Helmet with face shield, bunker coats, gloves & rubber boots).

ACCIDENTAL RELEASE MEASURES

Personal Precautions, Protective Equipment, and Emergency Procedures: Keep unprotected personnel away. Wear appropriate personal protective equipment.

Environmental precautions: Keep from entering storm sewers and ditches which lead to waterways.

Methods and Materials for Containment and Cleaning up: Eliminate all ignition sources. Stop spill at source. Dike and contain. Collect leaking & spilled liquid in sealable containers as far as possible.

HANDLING AND STORAGE

Precautions for Safe Handling: Isolate from oxidizers, heat, & open flame. Use only with adequate ventilation. Avoid prolonged or repeated contact with skin. Wear OSHA Standard goggles or face shield. Consult Safety Equipment Supplier. Wear goggles, face shield, gloves, apron & footwear impervious to material. Wash clothing before reuse. Avoid free fall of powder. Ground containers when transferring. Take precautions against static discharge. Do not flame cut, braze, or weld. Continue all label precautions!

Conditions for Safe Storage, including any Incompatibilities: Keep container tightly closed & upright when not in use to prevent leakage. Containers of this material may be hazardous when empty since they retain product residues (dust, solids); observe all warning and precautions listed for this product.



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EXPOSURE CONTROLS/PERSONAL PROTECTION

EXPOSURE GUIDELINES

<u>Ingredient Name</u>	<u>ACGIH TLV</u>	<u>TWA (OSHA)</u>	<u>CAS#</u>
AM-11	10 mg/m ³ * TWA	15 mg/m ³ * 5 mg/m ³ **	77-92-9

* Total Dust (no asbestos and < 1% crystalline silica for Particulates Not Otherwise Classified.

** Respirable Portion

Other Exposure Limits for Potential Decomposition Products: This product contains no EPA Hazardous Air Pollutants (HAP) in amounts > 0.1%.

Appropriate Engineering Controls

RESPIRATORY EXPOSURE CONTROLS: Maintain airborne contaminant concentrations below exposure limits given above. If respiratory protection is needed, use only protection authorized in 29 CFR 1910.134, European Standard EN 149, or applicable State regulations. If adequate ventilation is not available or there is potential for airborne exposure above the exposure limits, a respirator may be worn up to the respirator exposure limitations, check with respirator equipment manufacturer's recommendations/limitations. For a higher level of protection, use positive pressure supplied air respiration protection or Self-Contained Breathing Apparatus or if oxygen levels are below 19.5% or are unknown.

EMERGENCY OR PLANNED ENTRY INTO UNKNOWN CONCENTRATIONS OR IDLH CONDITIONS: Positive pressure, full-face piece Self-Contained Breathing Apparatus; or positive pressure, full-face piece Self-Contained Breathing Apparatus with an auxiliary positive pressure Self-Contained Breathing Apparatus.

VENTILATION:

Local Exhaust: Necessary

Mechanical (General): Necessary

Special: None

Other: None

Please refer to ACGIH document, "Industrial Ventilation, A Manual of Recommended Practices", most recent edition, for details.



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Individual Protection Measures, Such as Personal Protective Equipment

SKIN PROTECTION: Use gloves chemically resistant to this material. Preferred examples: Butyl rubber, Chlorinated Polyethylene, Polyethylene, Ethyl vinyl alcohol laminate ("EVAL"), Polyvinyl alcohol ("PVA"). Examples of acceptable glove barrier materials include: Natural rubber ("latex"), Neoprene, Nitrile/butadiene rubber ("nitril") or ("NBR"), Polyvinyl chloride ("PVC") or "vinyl", Viton.

NOTICE: The selection of a specific glove for a particular application and duration of use in a workplace should also take into account all relevant workplace factors such as, but not limited to: Other chemicals which may be handled, physical requirements (cut/puncture protection, dexterity, thermal protection), potential body reactions to glove materials, as well as the instructions/specifications provided by the glove supplier.

EYE PROTECTION: Splash goggles or safety glasses. Face-shields are recommended when the operation can generate splashes, sprays or mists.

BODY PROTECTION: Use body protection appropriate for task. Cover-all, rubber aprons, or chemical protective clothing made from impervious materials are generally acceptable, depending on the task.

WORK & HYGIENIC PRACTICES: Provide readily accessible eye wash stations & safety showers. Wash at end of each shift & before eating, smoking or using the toilet. Remove clothing that becomes contaminated. Destroy contaminated leather articles. Launder or discard contaminated clothing.

PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE: Powder, Opaque, White

ODOR: None

ODOR THRESHOLD: Not Available

GRAVITY @ 68/68°F, 20/20°C:

DENSITY: 1.664

POUNDS/GALLON: 13.878

SOLUBILITY IN WATER (weight %) Complete

pH 2.2

INITIAL BOILING POINT/RANGE: Not Available

MELTING/FREEZING POINT: Not Available

VAPOR PRESSURE (mm of Hg) @ 20°C: 0.0

EVAPORATION RATE: Not Available

PARTITION COEFFICIENT (N-OCTANOL/WATER): Not Available



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VISCOSITY:	Not Available
FLASH POINT:	No Flash to Boiling Point
AUTOIGNITION TEMPERATURE:	Not Applicable
UPPER FLAME LIMIT(volume % in air):	Not Applicable
LOWER FLAME LIMIT (volume % in air):	10.0 (Lowest Component)
DECOMPOSITION TEMPERATURE:	Not Applicable

STABILITY AND REACTIVITY

REACTIVITY & CHEMICAL STABILITY: Stable under normal conditions.

POSSIBILITY OF HAZARDOUS RECTIONS & CONDITIONS TO AVOID: Isolate from oxidizers, extreme heat, open flame, ignition sources, and incompatibles. Avoid dust formation. Take precautionary measures against static discharges.

INCOMPATIBILITIES: Strong bases and oxidizing agents. Isolate from metal nitrates (potentially explosive reaction), alkali carbonates and bicarbonates, potassium tartrate. Will corrode copper, zinc, aluminum and their alloys.

HAZARDOUS DECOMPOSITION PRODUCTS: Carbon Oxides from burning.

HAZARDOUS POLYMERIZATION: Will not Occur.

TOXICOLOGICAL INFORMATION

POTENTIAL HEALTH HAZARDS

ACUTE EFFECTS OF EXPOSURE

EYE & SKIN:	Primary irritation to skin, defatting, dermatitis. Primary irritation to eyes, redness, tearing, blurred vision. Powder can cause eye irritation. Wash thoroughly after handling.
INHALATION:	Vapor harmful.
INGESTION:	Swallowing can cause abdominal irritation, nausea, vomiting & diarrhea.



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SUBCHRONIC HAZARDS/ CONDITIONS AGGRAVATED

Medical Conditions Aggravated by exposure: Pre-existing disorders of any target organs mentioned in this SDS can be aggravated by over-exposure by routes of entry to components of this product. Persons with these disorders should avoid use of this product.

CHRONIC HAZARDS

Cancer, Reproductive & Other Chronic Hazards: This product has no carcinogens listed by IARC, NTP, NIOSH, OSHA or ACGIH, as of this date, greater or equal to 0.1%.

Target Organs: May cause damage to target organs, based on animal data.

Irritancy: Irritating to contaminated tissue.

Sensitization: No component is known as a sensitizer.

Mutagenicity: No known reports of mutagenic effects in humans.

Embryotoxicity: No known reports of embryotoxic effects in humans.

Teratogenicity: No known reports of teratogenic effects in humans.

Reproductive Toxicity: No known reports of reproductive effects in humans.

- A MUTAGEN is a chemical which causes permanent changes to genetic material (DNA) such that the changes will propagate across generational lines.
- An EMBRYOTOXIN is a chemical which causes damage to a developing embryo (such as: within the first 8 weeks of pregnancy in humans), but the damage does not propagate across generational lines.
- A TERATOGEN is a chemical which causes damage to a developing fetus, but the damage does not propagate across generational lines.
- A REPRODUCTIVE TOXIN is any substance which interferes in any way with the reproductive process.

MAMMALIAN TOXICITY INFORMATION:

LD50 (oral): 3 g/kg (Rat)

Irritation skin: 500 mg/24 hours (Rabbit, Mild)

Irritation eyes: 750 µg/24 hours (Rabbit, Severe)

ECOLOGICAL INFORMATION

All work practices must be aimed at eliminating environmental contamination.

EFFECT OF MATERIAL ON PLANTS AND ANIMALS: This product may be harmful or fatal to plant and animal life if released into the environment. Refer to Section 11 (Toxicological Information) for further data on the effects of this product's components on test animals.

EFFECT OF MATERIAL ON AQUATIC LIFE: No aquatic environmental information is available on this product.



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MOBILITY IN SOIL: Mobility of this material has not been determined.
DEGRADABILITY: This product is completely biodegradable.
ACCUMULATION: Bioaccumulation of this product has not been determined.

DISPOSAL CONSIDERATIONS

The generation of waste should be avoided or minimized wherever possible. 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. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers and liners may retain some product residues. Vapor from some product residues may create a highly flammable or explosive atmosphere inside the container. Do not cut, weld or grind used containers unless they have been cleaned thoroughly internally. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Processing, use or contamination may change the waste disposal requirements. Do not dispose of on land, in surface waters, or in storm drains. Waste should be recycled or disposed of in accordance with regulations. Large amounts should be collected for reuse or consigned to licensed hazardous waste haulers for disposal. ALL DISPOSAL MUST BE IN ACCORDANCE WITH ALL FEDERAL, STATE, PROVINCIAL, AND LOCAL REGULATIONS. IF IN DOUBT, CONTACT PROPER AGENCIES.

TRANSPORT INFORMATION

MARINE POLLUTANT:: No
DOT/TDG SHIP NAME: Not Regulated
DRUM LABEL: None
IATA/ICAO Not regulated
IMO/IMDG: Not regulated

Emergency Response Guidebook Number: None

REGULATORY INFORMATION

EPA REGULATION:

SARA SECTION 311/312 HAZARDS: Acute Health

All components of this product are on the TSCA list. This material contains no known products restricted under SARA Title III, Section 313 in amounts greater or equal to 1%.



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STATE REGULATIONS:

CALIFORNIA SAFE DRINKING WATER & TOXIC ENFORCEMENT ACT (PROPOSITION 65): This product contains no chemicals known to the State of California to cause cancer or reproductive toxicity.

INTERNATIONAL REGULATIONS:

The identified components of this product are listed on the chemical inventories of the following countries: Australia (AICS), Canada (DSL or NDSL), China (IECSC), Europe (EINECS, ELINCS), Japan (METI/CSCL, MHLW/ISHL), South Korea (KECI), New Zealand (NZIoC), Philippines (PICCS), Switzerland (SWISS), Taiwan (NECSI), USA (TSCA).

CANADA: WORKPLACE HAZARDOUS MATERIALS INFORMATION SYSTEM (WHMIS):

D2B: Irritating to skin / eyes.

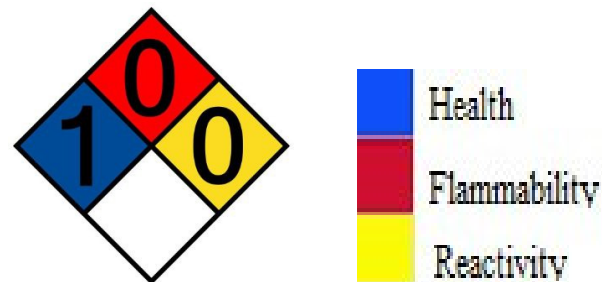
This product has been classified in accordance with hazard criteria of the Controlled Products Regulations (CPR) and the SDS contains all information required by the CPR.

OTHER INFORMATION

HMIS Rating:

HEALTH	1
FLAMMABILITY	0
REACTIVITY	0

Hazard rating: 0 – Minimal; 1 – Slight; 2 – Moderate; 3 – Serious; 4 – Severe; *Chronic health effect



Special HMIS Rating Notes:

Protection = H (Safety goggles, gloves, apron and a vapor respirator)

Hazard Ratings:



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HEALTH (NFPA): 2, HEALTH (HMIS): 2, FLAMMABILITY: 1, PHYSICAL HAZARD: 0
(Personal Protection Rating to be supplied by user based on use conditions.)

This information is intended solely for the use of individuals trained in the NFPA & HMIS hazard rating systems.

Employee training:

Employees should be made aware of all hazards of this material (as stated in this SDS) before handling it.