



SAFETY DATA SHEET

SECTION 1

MATERIAL IDENTIFICATION

PRODUCT NAME / DESCRIPTION: ATS-22

DISTRIBUTED / MANUFACTURED BY:
Advanced Chemical Technologies, Inc.
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Oklahoma City, OK 73114

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SECTION 2

HAZARD IDENTIFICATION

CLASSIFICATION:

Flammable Liquids	Category 3
Skin corrosion/irritation:	Category 2
Serious eye damage/eye irritation:	Category 2.5
Reproductive toxin:	Category 1.5
TOST: Acute:	Category 1
TOST: Chronic:	Category 3

SIGNAL WORD:

DANGER!

HAZARD STATEMENTS:

Extremely flammable liquid and vapor.
Causes serious eye irritation.
Causes damage to organs.
Harmful to aquatic life.

Causes skin irritation.
May damage fertility or the unborn child.
Causes damage to organs through prolonged or repeated exposure.
May cause drowsiness or dizziness.



PRECAUTIONARY STATEMENTS:

Obtain special instructions before use.
Do not handle until all safety precautions have been read and understood.
Use personal protective equipment as required.
Avoid breathing dust, fumes, gas, mist, vapors or spray.
Keep away from heat, sparks, open flames and hot surfaces. No smoking.
Do not spray on open flame or other ignition source.
Keep/store away from clothing or combustible materials.
Take any precaution to avoid mixing with combustibles.
Keep container tightly closed.
Ground/bond container and receiving equipment.
Use explosion proof electrical, ventilating, lighting and equipment.
Use only non sparking tools.
Take precautionary measures against static discharge.
Do not subject to grinding, shock or friction.

Avoid contact during pregnancy and while nursing.
 Wear fire/flame resistant/retardant clothing.
 Use only outdoors or in a well ventilated area.
 Wash all exposed skin thoroughly after handling.
 Avoid release to the environment.
 If medical advice is needed, have product container or label at hand.
 Keep out of reach of children.
 Read label before use.
 Keep only in original container.
 Do not get in eyes, on skin or on clothing.
 Do not eat, drink or smoke when using this product.
 In case of fire: Stop leak if safe to do so. Eliminate all ignition sources if safe to do so.
 Store in well ventilated place.

Toxicity:
 See section 11

SECTION 3

HEALTH HAZARDS

<u>Chemical Name</u>	<u>CAS No.</u>	<u>% W/W</u>
Dimethyl Carbonate	616-38-6	< 20
Isobutyl trimethoxysilane	18395-30-7	< 20
Methanol (Proprietary Formula)	67-56-1	< 70

SECTION 4

FIRST AID MEASURES

Potential acute health effects:	
Eyes:	May cause severe irritation, burns or damage.
Skin:	May cause severe irritation, burns or damage.
Inhalation:	May cause severe irritation.
Ingestion:	May cause irritation, corrosion, ulceration, nausea and vomiting.
Medical conditions aggravated by exposure:	None known.
Eye contact:	Immediately flush eyes with cool running water. Lift and separate eye lids while flushing with plenty of water for at least 15 minutes. Get medical attention.
Skin contact:	Wash with soap and water. Get medical attention if irritation occurs. Wash clothing before reuse. Destroy contaminated shoes.
Inhalation:	Remove victim to fresh air and keep at rest in a position comfortable for breathing. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Seek medical attention if symptoms develop.
Ingestion:	No NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. If large quantities of this material are swallowed, call a physician immediately. Give plenty of water.

SECTION 5

FIRE FIGHTING MEASURES

Fire hazard classification (OSHA/NFPA):	3
Suitable extinguishing media:	Water Spray Alcohol resistant foam Carbon Dioxide (CO2) Dry Chemical
Unsuitable extinguishing media:	High volume water jet
Hazardous combustion products:	Carbon oxides Silicon oxides Formaldehyde
Specific hazards during firefighting:	Do not use a solid stream as it may scatter and spread fire Flash back possible over considerable distance Vapors may form explosive mixtures with air.

Specific extinguishing methods:

Exposure to combustion products may be a hazard to health.
Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
Use water spray to cool unopened containers.
Remove undamaged containers from fire area, if it is safe to do so.
Evacuate area.

Special protective equipment for firefighters:

Wear self-contained breathing apparatus.
Use personal protective equipment.

SECTION 6

ACCIDENTAL RELEASE MEASURES

**Personal precautions, protective equipment and emergency procedures:
Environmental precautions:**

Remove all sources of ignition.
Use personal protective equipment.
Follow safe handling advice and personal protective equipment recommendations.
Discharge into the environment must be avoided.
Prevent further leakage if safe to do so.
Prevent spreading over a wide area (e.g. by containment or oil barriers).
Retain and dispose of contaminated wash water.
Local authorities should be advised if significant spillages cannot be contained.

Methods and materials for containment and cleaning up:

Non sparking tools should be used.
Soak up with inert absorbent material.
Suppress (knock down) gases/vapors/mists with a water spray jet.
For large spills, provide diking or other appropriate containment to keep material from spreading. If diked material can be pumped, store recovered material in appropriate container.
Clean up remaining materials from spill with suitable absorbent.
Local or national regulations may apply to releases and disposal of material, as well as those materials and items employed in the cleanup releases. You will need to determine which regulations are applicable.

SECTION 7

HANDLING AND STORAGE

Technical measures:

Ensure all equipment is electrically grounded before beginning transfer operations.
This material can accumulate static charge due to inherent physical properties and can therefore cause an electrical ignition source to vapors in order to prevent fire hazard, as bonding and grounding may be insufficient to remove static electricity, it is necessary to provide an inert gas purge before beginning transfer operations.
Restrict flow velocity in order to reduce the accumulation of static electricity

Local/Total ventilation:

Use with local exhaust ventilation
Use only in area equipped with explosion proof exhaust ventilation.

Advice on safe handling:

Do not get on skin or clothing.
Do not breathe vapors or spray mist.
Do not swallow.
Avoid contact with eyes.
Handle in accordance with good industrial hygiene and safety practice.
Non sparking tools should be used.
Keep container tightly closed.
Keep away from water.
Protect from moisture.
Keep away from heat and sources of ignition.
Take precautionary measures against static discharge.
Take care to prevent spills, waste and minimize release to the environment.

Conditions for safe storage:

Keep in properly labeled containers.
Store locked up.
Keep tightly closed.
Keep in cool, well-ventilated place.
Store in accordance with the particular national regulations.

Materials to avoid:

Keep away from heat and sources of ignition.
Do not store with the following product types:
Strong oxidizing agents

Organic peroxides
 Flammable solids
 Pyrophoric liquids
 Pyrophoric solids
 Self-heating substances and mixtures
 Substances and mixtures which, in contact with water, emit flammable gases
 Explosives
 Gases

SECTION 8

EXPOSURE CONTROLS/PERSONAL PROTECTION

Ingredients with workplace control parameters

Ingredients	CAS no.	Value type (form of exposure)	Control parameter / Permissible concentration	Basis
Methanol	67-56-1	TWA	200 ppm	ACGIH
		STEL	250 ppm	ACGIH
		TWA	200 ppm 260 mg/m3	NIOSH REL
		ST	250 ppm 325 mg/m3	NIOSH REL
		TWA	200 ppm 260 mg/m3	OSHA Z-1

Hazardous components without workplace control parameters

Ingredients	CAS-No.	Value Type (form of exposure)	Control Parameter / Permissible concentration	Basis
Isobutyl trimethoxysilane	18395-30-7			

Occupational exposure limits of decomposition products

Ingredients	CAS-No.	Value Type (form of exposure)	Control Parameter / Permissible concentration	Basis
Methanol	67-56-1	TWA	200 ppm	ACGIH
		STEL	250 ppm	ACGIH
		TWA	200 ppm 260 mg/m3	NIOSH REL
		ST	250 ppm 325 mg/m3	NIOSH REL
		TWA	200 ppm 260 mg/m3	OSHA Z-1

Biological occupational exposure limits

Ingredients	CAS-No.	Control Parameter	Biological Specimen	Sampling time	Permissible concentration	Basis
Methanol	67-56-1	Methanol	Urine	End of shift (as soon as possible after shift ends)	15 mg/l	ACCGIH BEI

Engineering measures:

Processing may form hazardous compounds.
 Minimize workplace concentrations.
 Use only in an area equipped with explosion proof exhaust ventilation.
 Use with local exhaust ventilation.

**Personal Protective Equipment
 Respiratory Protection:**

General and local exhaust ventilation is recommended to maintain vapor exposures below recommended limits. Where concentrations are above recommended limits or are unknown, appropriate respiratory protection should be worn. Follow OSHA respirator regulations (29 CFR 1910.134) and use NIOSH/MSHA approved respirators. Protection provided by air purifying respirators against exposure to any hazardous chemical is limited. Use a positive pressure air supplied respirator if there is any potential for uncontrolled release, exposure levels are unknown, or any other circumstance where air purifying respirators may not provide adequate protection.

Hand Protection:	Antistatic gloves Impervious gloves Flame retardant gloves Remarks: Choose gloves to protect hands against chemicals depending on the concentration specific to place of work. Breakthrough time is not determined for the product. Change gloves often! For special applications, we recommend clarifying the resistance to chemicals of the aforementioned protective gloves with the glove manufacturer. Wash hands before breaks and at the end of the workday.
Eye Protection:	Safety glasses
Skin and body Protection:	Select appropriate protective clothing based on chemical resistance data and an assessment of the local exposure potential. Wear the following personal protective equipment: Flame retardant antistatic protective clothing Impervious protective clothing (e.g. gloves, boots aprons, etc.)
Hygiene measures:	Ensure that eye flushing systems and safety showers are located close to the work area. Do not eat, drink or smoke. Wash contaminated clothing before reuse.

These precautions are for room temperature handling. Use at elevated temperature or aerosol spray applications may require added precautions. For further information regarding use of silicones/organic oils in consumer aerosol applications, please refer to the guidance document regarding the use of these types of materials in consumer aerosol applications that has been developed by the silicone industry (www.SEHSC.com).

SECTION 9

PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	Liquid
Color:	Clear
Odor:	Alcohol
Odor Threshold:	No data available
pH:	No data available
Boiling point:	No data available
Melting point:	No data available
Flash Point:	No data available
Evaporation Rate (Butylacetate=1):	No data available
Flammability (solid, gas):	Flammable
Upper Explosion Limit (UEL):	No data available
Lower Explosion Limit (LEL):	No data available
Specific gravity (Water=1):	0.82+/-0.05
Solubility water:	Soluble
Partition coefficient:	No data available
Autoignition Temperature:	No data available
Decomposition Temperature:	No data available
Viscosity (CPS):	No data available

SECTION 10

STABILITY AND REACTIVITY

Reactivity:	Not classified as a reactivity hazard.
Chemical Stability:	Stable under normal conditions.
Possibility of hazardous reactions:	Flammable liquid and vapor. Vapors may form explosive mixture with air. Use at elevated temperatures may form highly hazardous compounds. Can react with strong oxidizing agents. Hazardous decomposition products will be formed upon contact with water or humid air. Hazardous decomposition products will be formed at elevated temperatures.
Conditions to avoid:	Exposure to moisture. Handling operations that can promote accumulation of static charges. Heat, flames, sparks.

Incompatible materials: Oxidizing agents
Water

Hazardous decomposition products: None known

Contact with water or humid air: Methanol

Thermal decomposition: Formaldehyde

SECTION 11

TOXICOLOGICAL INFORMATION

Raw Material	Test	Result	Route	Species
Dimethyl Carbonate (616-38-6)	LD50	6000 mg/kg	Oral	Rat
Isobutyl trimethoxysilane (18395-30-7)	LD50	10,000 mg/kg	Oral	Rat
Methanol (67-56-1)	LD50	5628 mg/kg	Oral	Rat

See Section 4 for symptoms

Carcinogenicity: No known carcinogens
Mutagenicity: No known mutagens
Reproductive Toxins: None known

SECTION 12

ECOLOGICAL INFORMATION

Raw Material	Test	Result	Time	Species
Dimethyl Carbonate (616-38-6)	EC50	9 mg/L	96 hr	Algae
Isobutyl trimethoxysilane (18395-30-7)	LC50	> 100 mg/L	96 hrs	Zebra Fish
Methanol (67-56-1)	LC50	15,400 mg/L	96 hrs	Lepomis macrochirus

Persistence and degradability: No data available
Bioaccumulation potential: No data available
Mobility in soil: No data available

SECTION 13

DISPOSAL CONSIDERATIONS

Whatever cannot be saved for recovery or recycling should be managed in an appropriate and approved waste disposal facility. Processing, use or contamination of this product may change the waste management conditions. State and local disposal regulations may differ from federal disposal regulations. Dispose container and unused contents in accordance with federal, state and local requirements.

SECTION 14

TRANSPORT INFORMATION

FLAMMABLE LIQUIDS, N.O.S.
 (Contains Dimethyl Carbonate, Alkoxysilane, and Methanol)
 3, UN1993, PG II
 FLAMMABLE LABEL/PLACARD REQUIRED

SECTION 15

REGULATORY INFORMATION

US FEDERAL REGULATIONS

SARA (SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT):

SARA 302: Extremely hazardous substances list: NA
SARA 312: Hazard category: NA
SARA 313: Toxic chemicals list: NA

CERCLA (COMPREHENSIVE ENVIRONMENTAL RESPONSE COMPENSATION AND LIABILITY ACT): NA
RCRA (RESOURCE CONSERVATION AND RECOVERY ACT) LISTED HAZARDOUS WASTES: NA

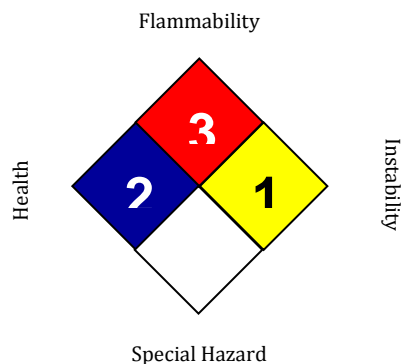
CWA (CLEAN WATER ACT) LISTED SUBSTANCES:
FDA (FOOD AND DRUG ADMINISTRATION):
TSCA (TOXIC SUBSTANCES CONTROL ACT):

NA
NA
ALL INGREDIENTS
LISTED

SECTION 16

OTHER INFORMATION

NFPA:



HMIS III:

HEALTH	2
FLAMMABILITY	3
PHYSICAL HAZARD	1

- 0 = not significant**
- 1 = slight**
- 2 = moderate**
- 3 = high**
- 4 = extreme**
- * = chronic**

THIS INFORMATION IS OFFERED IN GOOD FAITH AS TYPICAL VALUES AND NOT AS A PRODUCT SPECIFICATION. NO WARRANTY, EXPRESSED OR IMPLIED, IS HEREBY MADE. THE RECOMMENDED INDUSTRIAL HYGIENE AND SAFE HANDLING PROCEDURES ARE BELIEVED TO BE GENERALLY APPLICABLE. HOWEVER, EACH USER SHOULD REVIEW THESE RECOMMENDATIONS IN THE SPECIFIC CONTEXT OF THE INTENDED USE AND DETERMINE WHETHER THEY ARE APPROPRIATE.