



SAFETY DATA SHEET

SECTION 1

MATERIAL IDENTIFICATION

PRODUCT NAME / DESCRIPTION: ATS-100

DISTRIBUTED / MANUFACTURED BY:

Advanced Chemical Technologies
9608 N Robinson
Oklahoma City, OK 73114

Date: 1/5/2021 (Version 5)
Phone: (405) 843-2585
Emergency Phone: (800) 255-3924

SECTION 2

HAZARD IDENTIFICATION

CLASSIFICATION:

Flammable Liquid:	Category 3
Skin Irritation:	Category 2
Specific Target Organ Systemic Toxicity – Single Exposure:	Category 3
Target Organs:	Central Nervous System



SIGNAL WORD:

WARNING!

HAZARD STATEMENTS:

Flammable liquid and vapor.
Causes skin irritation.
May cause drowsiness or dizziness.

PRECAUTIONARY STATEMENTS

Prevention:

Keep away from heat/sparks/open flames/hot surfaces. No smoking.
Keep container tightly closed.
Ground/bond container and receiving equipment.
Use explosion-proof electrical/ventilating/lighting/equipment.
Use only non-sparking tools.
Take precautionary measures against static discharge.
Avoid breathing dust/fumes/gas/mist/vapors/spray.
Wash skin thoroughly after handling.
Use only outdoors or in a well-ventilated area.
Wear protective gloves/eye protection/face protection.

Response:

IF ON SKIN (OR HAIR): Take off immediately all contaminated clothing. Rinse skin with water or shower. IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER or doctor/physician if they feel unwell. If skin irritation occurs: Get medical advice/attention. Take off contaminated clothing and wash it before reuse. IN CASE OF FIRE: Use water spray, alcohol resistant foam, dry chemical, or carbon dioxide to extinguish.

Storage: Store in a well-ventilated place. Keep container tightly closed. Keep cool. Store locked up.
Disposal: Dispose of contents/container to an approved waste disposal plant.
Hazard(s) not otherwise classified (HNOC): None.

SECTION 3

HEALTH HAZARDS

Substance name: Isobutyl trimethoxysilane
CAS No.: 18395-30-7
Chemical nature: Alkoxysilane

Hazardous ingredients:

<u>Chemical name</u>	<u>CAS No.</u>	<u>Concentration%</u>
Isobutyl trimethoxysilane	18395-30-7	>=90 - <=100

SECTION 4

FIRST AID MEASURES

General Information: Take off contaminated clothing immediately.
Inhalation: If aerosol or mists are formed: Move person to fresh air. In case of persistent discomfort: Consult a doctor immediately.
Skin Contact: Wash off immediately with plenty of water. Consult a doctor in the event of permanent skin irritation.
Eye contact: Keeping eyelid open, immediately rinse for at least 5 minutes using plenty of water or, if necessary, eye rinsing solution. In case of persistent discomfort, consult an ophthalmologist.
Ingestion: Have the mouth rinsed with water. Call a physician immediately.
Personal Protection for First Aid Responders: As in any fire, wear self-contained positive pressure breathing apparatus, (MSHA/NIOSH approved or equivalent) and full protective gear.

Most important symptoms/effects, acute and delayed

Symptoms: If large amount of substance is absorbed, liberation of reaction product (methanol) can lead to symptoms of poisoning. Possible signs of poisoning include daze, dizziness, nausea, colicky abdominal pain, or respiratory disturbance. Symptoms of increasing intoxication include dysopia or loss of eyesight. Treatment may include immediate gastric lavage, antidote treatment or correction of acid-base balance. Detection of the substance (methanol) is possible in blood. Evidence shows that the treatment of ethanol absorption is enhanced through the administration of ethanol, which should be given to produce a blood level of at least 0.1%. Ethanol diminishes the production of toxic metabolites of methanol. Obtain treatment of allergic reaction if necessary.

Hazards: No data available

Indication of immediate medical attention and special treatment needed:

Treatment: None known.

SECTION 5**FIRE FIGHTING MEASURES****Suitable (and unsuitable) extinguishing media:**

Suitable Extinguishing Media: Water spray, foam, dry powder, or carbon dioxide.

Media:

Unsuitable Extinguishing Media: Water. High Volume Water Jet.

Media:

Specific hazards arising from the chemical: Standard procedure for chemical fires. Combustible liquid. Vapors can travel to a source of ignition and flash back. Explosive mixtures may occur at temperatures at or above the flashpoint.

Special protective equipment and precautions for firefighters:

Special firefighting procedures: Water used to extinguish fire should not enter drainage systems, soil or stretches of water. Ensure there are sufficient retaining facilities for water used to extinguish fire. Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations. Containers can build up pressure if exposed to heat (fire). Cool with water spray.

Special protective equipment for firefighters: As in any fire, wear self-contained positive pressure breathing apparatus, (MSHA/NIOSH approved or equivalent) and full protective gear.

SECTION 6**ACCIDENTAL RELEASE MEASURES**

Personal precautions, protective equipment, and emergency procedures: Keep away from heat and sources of ignition.

Accidental release measures: Remove sources of ignition and ventilate area. Runoff may create fire or explosion hazard in sewer. Assure sufficient ventilation.

Methods and materials for containment and cleaning up: Contain spillage, and then collect with non-combustible absorbent material, (e.g., sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local/national regulations (see section 13).

Environmental precautions: Obey relevant local, state, provincial and federal laws, and regulations. Do not contaminate any lakes, streams, ponds, groundwater, or soil.

SECTION 7**HANDLING AND STORAGE****Handling**

Technical measures (e.g., Local, and general ventilation): Use this product preferably in a closed system, or use process enclosures, local exhaust ventilation or other engineering controls to minimize airborne exposure.

Safe handling advice: Wear personal protective equipment; see section 8. Vapors may spread long distances and travel to areas away from the work site before igniting or flashing back to the vapor source. Keep away from heat, sparks, flames, and other sources of ignition. Keep container tightly closed. Use only with adequate ventilation.

Contact avoidance measures: No data available.

Hygiene measures: Avoid contact with skin, eyes, and clothing. Do not inhale vapors or aerosols. Do not eat, drink, or smoke when using this product. Remove contaminated or saturated clothing.

Storage:

Safe storage conditions: Take precautionary measures against static charges, keep away from sources of ignition. Explosion protection equipment required. Danger of explosion from

residual product fumes; therefore, avoid spark production through cutting, grinding, or welding work in the area of the container. When repairs of the production system are to be made, (e.g. welding work), the section to be repaired must be essentially free of the product. This material may have low electrical conductivity and therefore may accumulate dangerous levels of static electricity. An ignitable vapor-air mixture can form inside storage tanks. The user must be sure to dissipate static charge by careful bonding and grounding of all equipment and personnel involved in fluid transfer with continuity checks to prove effectiveness. Additional precautions against fire and explosion are the use of inert gas to purge vapor space; dip-pipes while filling vessels, especially lined vessels; grounded tank level floats; reduced flow velocity; self-closing valves on transfer lines and flame arrestors in vent lines. Additional guidance on fire and explosion protection may be found in various consensus standards, including NFPA 30, 69 and 77 and API 2003 as well as OSHA regulation 29CFR1910.106. Keep containers tightly closed in a cool, well-ventilated place, Protect from moisture. Residual vapors might explode on ignition; do not apply heat, cut, drill, grind, or weld on or near this container. No data available.

Safe packaging materials:

SECTION 8 PERSONAL PROTECTION / EXPOSURE CONTROLS

Control Parameters:

Occupational Exposure limits: None of the components have assigned exposure limits. Hazardous components without workplace parameters.

Appropriate Engineering Controls: Use this product preferably in a closed system, or use process enclosures, local exhaust ventilation or other engineering controls to minimize airborne exposure.

Individual protection measures, such as personal protection equipment

Eye / face protection: Use chemical splash goggles or face shield.

Skin Protection:

Hand protection: Material: Nitrile rubber/Nitrile latex (NBR)
Break-through time: > = 480 minutes
Material: Fluorinated rubber (FKM)
Break-through time: > = 480 minutes
Guideline: Source: GESTIS substance database (hazardous substance information system of commercial professional associations)
Additional information: The above-mentioned hand protection is based on knowledge of the chemistry and anticipated uses of this product, but it may not be appropriate for all workplaces. A hazard assessment should be conducted prior to use to ensure suitability of gloves for specific work environments and processes prior to use.
Use impermeable gloves.

Skin and Body Protection: A safety shower and eye wash station should be readily available. To identify additional Personal Protection Equipment (PPE) requirements, it is recommended that a hazard assessment in accordance with the OSHA PPE Standard (29CFR1910.132) be conducted before use of this product.

Respiratory Protection: A respiratory protection program that meets OSHA 1910.134 and ANSI Z88.2 or applicable federal/provincial requirements must be followed whenever workplace conditions warrant respirator use. NIOSH's "Respirator Decision Logic" may be useful in determining the suitability of various types of respirators.

Hygiene Measures: Avoid contact with skin, eyes, and clothing. Do not inhale vapors or aerosols. Do not drink, eat, or smoke when using this product. Remove contaminated or saturated clothing.

SECTION 9

PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	Liquid
Color:	Colorless
Odor:	Fruity
Odor Threshold:	No data available
pH:	No data available
Freezing Point:	< -180 °C (OECD TG 102)
Boiling Point:	150 °C (1,013 hPa) (DIN 51 751)
Flash Point:	39 °C (DIN EN ISO 13736)
Evaporation Rate:	No data available
Flammability (solid, gas):	Not applicable
Upper Explosion Limit (UEL):	No data available
Lower Explosion Limit (LEL):	No data available
Vapor Pressure:	Approx. 3 hPa (20 °C)
Vapor density (air=1)	No data available
Density:	0.93 g/cm ³ (20 °C) (DIN 51757)
Solubility(ies) - Water solubility:	Not miscible. Decomposition by hydrolysis
Solubility(ies) – Other	No data available
Partition Coefficient: n-octanol/water	2.1 (QSAR)
Auto ignition Temperature:	267 °C (ASTM E 659)
Decomposition Temperature:	No data available
Viscosity, kinematic:	No data available
Viscosity, dynamic:	0.8 mPa.s (20 °C, DIN 53 015)
Explosive properties:	Vapors can form explosive mixtures with air. Not explosive.
Oxidizing properties:	No data available
Minimum ignition temperature:	No data available

SECTION 10

STABILITY AND REACTIVITY

Reactivity:	No dangerous reaction known under normal conditions of use.
Chemical stability:	Stable under recommended storage conditions.
Possibility of hazardous reactions:	Reacts with water.
Conditions to avoid:	Vapors can form explosive mixtures with air. Keep away from heat and sources of ignition.
Incompatible materials:	Water. Atmospheric humidity.
Hazardous decomposition products:	Methanol in case of hydrolysis. Alcohol formed by hydrolysis lowers the flashpoint of this product.

SECTION 11

TOXICOLOGICAL PROPERTIES

Information on likely routes of exposure:	
Inhalation:	No data available.
Skin contact:	No data available.
Ingestion:	No data available.
Eye Contact:	No data available.

Symptoms related to the physical, chemical and toxicological characteristics:

Inhalation: No data available.
Skin Contact: No data available.
Eye contact: No data available.
Ingestion: No data available.

Information on toxicological effects: Acute toxicity (list all possible routes of exposure)

Oral product: LD50 (rat): > 2,000 mg/kg
Dermal product: No data available.
Inhalation product: LC50 (rat): 11 mg/l Dusts, mists, fumes
Repeated dose toxicity product: NOAEL (rat, oral): > = 1,000 mg/kg tested substance: Structurally similar substance
NOAEC (rat, inhalation – vapor): > = 2540 mg/m³
Skin corrosion/irritation product: Skin irritation OECD Test Guideline 404 (rabbit): Skin irritation
Serious eye damage/eye irritation product: Not irritating. Rabbit: Not irritating
Respiratory or skin sensitization product: Buehler Test, OECD Test Guideline 406 (Guinea Pig): Not a skin sensitizer
Carcinogenicity Product: Contains no carcinogenic substances as defined by NTP, IARC and/or OSHA.
IARC Monographs on the Evaluation of Carcinogenic Risks to Humans: No carcinogens present or none present in regulated quantities
US. National Toxicology Program (NTP) Report on Carcinogens: No carcinogens present or none present in regulated quantities
US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050): No carcinogens present or none present in regulated quantities

Germ Cell Mutagenicity

In vitro

Product: Ames test (OECD TG 471): negative
Chromosomal aberration (OECD TG 473): negative tested substance: Structurally similar substance
Gene Mutation (OECD TF 476): negative tested substance: Structurally similar substance

In vitro

Product: Micronucleus test (OECD TG 474) Oral (Mouse): negative tested substance: Structurally similar substance

Reproductive toxicity

Product: No data available.

Specific Target Organ Toxicity - Single Exposure

Product: Narcotic effect.

Specific Target Organ Toxicity - Repeated Exposure

Product: No evidence for hazardous properties

Aspiration Hazard Product: No evidence of aspiration toxicity

Other Effects: No data available

SECTION 12

ECOLOGICAL INFORMATION

Ecotoxicity:

Acute hazards to the aquatic environment:

Fish Product: LC 50 (Brachydanio rerio, 96 h): > 100 mg/l

Aquatic Invertebrates Product: EC 50 (Daphnia magna, 48 h): > 865 mg/l

Chronic hazards to the aquatic environment:

Fish Product: No data available.
Aquatic Invertebrates Product: No data available.
Toxicity to Aquatic Plants Product: EC 50 (Desmodesmus subspicatus (green algae), 72 h): > 1,170mg/L
NOEC (Desmodesmus subspicatus (green algae), 72 h): 221 mg/L

Persistence and Degradability

Biodegradation Product: 47%
BOD/COD Ratio Product: No data available.

Bioaccumulative potential

Bioconcentration Factor (BCF) Product: Low

Partition coefficient n-octanol/ water (Log Kow) Product: Log Know: 2.1 20 °C (QSAR)

Mobility in soil: Absorption on the floor: Low

Other adverse effects: The data we have at our disposal do not necessitate identification concerning environmental hazard.

SECTION 13

DISPOSAL CONSIDERATIONS

Disposal methods: Waste must be disposed of in accordance with federal, state, provincial and local regulations. Since empty containers retain product residue, follow MSDS and label warnings even after container is emptied. Residual vapors might explode on ignition; do not apply heat, cut, drill, grind, or weld on or near this container.

Contaminated Packaging: Do not reuse empty containers and dispose of in accordance with the regulations issued by the appropriate local authorities. If there is product residue in the emptied container, follow directions for handling on the container's label. Incorrect disposal or reuse of the container is illegal and can be dangerous. Other countries: observe the national regulations.

SECTION 14

TRANSPORTATION INFORMATION

Domestic Regulations:

49 CFR

UN/ID/NA number: UN 1993
Proper shipping name: FLAMMABLE LIQUID, N.O.S.
Trimethoxy(2-methylpropyl) silane
Class: 3
Packing group: III
Labels: 3
ERG Code: 128
Marine pollutant: No
Remarks: In the U.S., this material may be classified as combustible liquid. Combustible liquids are not regulated in packages 450 liters or less. This applies for shipments by road and rail only.

International Regulations:

IATA-DGR

UN/ID No.	UN 1993
Proper shipping name:	FLAMMABLE LIQUID, N.O.S. Trimethoxy(2-methylpropyl) silane
Class:	3
Packing group:	III
Labels:	3
Packing instruction (cargo aircraft):	366
Packing instruction (passenger aircraft):	355

IMDG-Code

UN number:	UN 1993
Proper shipping name:	FLAMMABLE LIQUID, N.O.S. Trimethoxy(2-methylpropyl) silane
Class:	3
Packing group:	III
Labels:	3
EmS Code:	F-E, <u>S-E</u>
Marine pollutant:	No

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable for product as supplied.

Special precautions for user

The transport classification(s) provided here are for informational purposes only, and solely based upon the properties of the unpackaged material as is described within this Safety Data Sheet. Transportation classifications may vary by mode of transportation, package sizes, and variations in regional or country regulations.

SECTION 15**REGULATORY INFORMATION****US Federal Regulations****TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)**

None present or none present in regulated quantities.

US. Toxic Substances Control Act (TSCA) section 5(a)(2) Final Significant New Use Rules (SNURs)(40 CFR 721, Subpt E)

None present or none present in regulated quantities.

US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

None present or none present in regulated quantities.

CERCLA Hazardous Substance List (40 CFR 302.4)

None present or none present in regulated quantities.

Superfund Amendments and Reauthorization Act of 1986 (SARA)**Hazard categories**

Flammable (gases, aerosols, liquids, or solids), Skin Corrosion or Irritation, Specific target organ toxicity (single or repeated exposure)

SARA 302 Extremely Hazardous Substance

None present or none present in regulated quantities.

US. EPCRA (SARA Title III) Section 304 Extremely Hazardous Substances Reporting Quantities and the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) Hazardous Substances

SARA 311/312 Hazardous Chemical

None present or none present in regulated quantities.

SARA 313 (TRI Reporting)

None present or none present in regulated quantities.

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130):

None present or none present in regulated quantities.

Clean Water Act Section 311 Hazardous Substances (40 CFR 117.3)

None present or none present in regulated quantities.

US State Regulations

US. California Prop 65

No ingredient requiring a warning under CA Prop 65.

US. New Jersey Worker and community Right-To-Know Act

No ingredient regulated by NJ Right-To-Know Law present.

US. Massachusetts RTK - Substance List

No ingredient regulated by MA Right-To-Know Law present.

US. Pennsylvania RTK - Hazardous Substances

No ingredient regulated by MA Right-To-Know Law present.

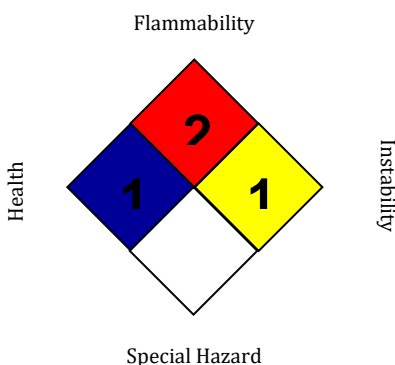
US. Rhode Island RTK

No ingredient regulated by RI Right-To-Know Law present.

SECTION 16

OTHER INFORMATION

NFPA:	HMIS III:
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HEALTH	2
FLAMMABILITY	2
PHYSICAL HAZARD	1

- 0 = Minimal**
- 1 = Slight**
- 2 = Moderate**
- 3 = Serious**
- 4 = Severe**
- * = 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.