OPERATOR'S MANUAL

for the

TDA-J1, TDA-J3 & TDA-J5

PSL Jet Atomizer

PN: TPSL-1395, TPSL-1396 & TPSL-1397

Air Techniques International
Division of Hamilton Associates, Inc

11403 Cronridge Drive
Owings Mills, MD 21117 USA

TEL: 410-363-9696
FAX: 410-363-9695

www.atitest.com
info@atitest.com

Main Components

This unit is comprised of two primary components:
1.) An atomizing nozzle.
2.) A reagent storage vessel.

Theory of operation

The basic mechanism of operation consists of pressurizing a vessel containing PSL reagent thereby transporting PSL reagent to the atomizing nozzle. Once introduced to the atomizing nozzle, the reagent is then aerosolized.

Operating Instructions

1. Open lid of pressure vessel and fill with PSL reagent. When filled to the desired level, close the lid of the pressure vessel.

2. Check that the regulator is in the closed position by adjusting the regulator control knob fully counterclockwise.

3. Turn the metering valve fully clockwise to the closed position. **Caution: Do not over-tighten metering valve for this will result in damage to the valve seating.**

4. Attach atomizing nozzle to the pressure vessel via the double lumen tubing provided with the unit. At one end of the tubing, attach the black tubing to the push-in fitting located on the side of the pressure regulator. Attach the clear tubing to the push-in fitting located at the output of the metering valve. To the other end of the double lumen tubing attach the black tubing to the elbow push-in fitting located on the side of the atomizing nozzle. Attach the clear tubing to the straight push-in fitting located at the end of the atomizing nozzle. Make sure the tubing is pushed in as far as it can go for each of these four push-in fittings. If not properly installed leaking of PSL reagent will be observed upon pressurization of the vessel.

6. Once the atomizing nozzle is attached to the pressure vessel as per instruction 4 attach a source of clean, dry, compressed air to the quick connect located on the side of the pressure regulator.

7. Adjust air pressure by turning the regulator control knob clockwise. The final pressure should be in the range of 50-100 psig. For best results, the pressure should be set to a minimum of 80 psig.

8. Turn the metering valve counter-clockwise to the desired position. The metering valve is provided as a means for controlling aerosol output.

9. Upon completion of the above instructions, one should observe an aerosol exiting the nozzle.

Maintenance

Periodic cleaning of the nozzle will be required.

To clean the nozzle:

A. Detach it from the pressure vessel.

B. Unscrew the nozzle insert from the nozzle body.

C. Using a cotton swab and alcohol clean the conic region of the nozzle body located on the inside of the nozzle body.

Use an alcohol rinse for both the nozzle body and nozzle insert. For best results, ultrasonically clean both components. If clogging of the nozzle insert orifice occurs pressurized air should be used to remove any blockage.

Specifications

Airflow Capacity: 1, 500 to 100,000 cfm
Aerosol Output Range: 1×10^6 to 100×10^6 particles/ft³
Adjustable Output with Metering Valve: Yes
Aerosol size: 0.13, 0.178, 0.22, 0.33 & 0.54 µ @ 3.4×10^{11} particles/ml
Compressed Air (Quick Coupling): 80 psi @ 3.5 cfm
Electrical: not required

CAPACITY	1 Gallon	3 Gallon	5 Gallon
Size (in): H × OD	10 ¾ × 9 ½	16 ½ × 9 ½	23 ¾ × 9 ½
Size (cm): H × OD	27 × 24	42 × 24	60 × 24
Loaded Weight (lbs)	17	36	54
Loaded Weight (kg)	8	16	25

International Warranty
Air Techniques International

Air Techniques International, hereinafter referred to as ATI, warrants the equipment purchased hereunder to be free from defect in materials and workmanship under normal use and service, when used for the purpose for which it is designed, for a period of (1) one year from the date of shipment. ATI further warrants that the equipment will perform in accordance with the technical specifications accompanying the formal equipment offer.

ATI will repair or replace any such defective items that may fail within the stated warranty period, PROVIDED:

1. That any claim of defect under this warranty is made within thirty (30) days after discovery thereof and that inspection by ATI, if required, indicates the validity of such claim to ATI's satisfaction; and
2. That the defect is not the result of damage incurred in shipment to or from our factory; and
3. That the equipment has not been altered in any way whether as to design or use, whether by replacement parts not supplied or approved by ATI, or otherwise; and
4. That any equipment or accessories furnished but not manufactured by ATI, or not of ATI design, shall be subject only to such adjustments as ATI may obtain from the supplier thereof.

ATI's obligation under this warranty is limited to the repair or replacement of defective parts with the exception noted above. If the equipment includes a scattering chamber, ATI's warranty does not extend to contamination of the scattering chamber by foreign material.

At ATI's option, any defective equipment that fails within the warranty period shall be returned to ATI's factory for inspection, properly packed with shipping charges prepaid. No equipment shall be returned to ATI without prior issuance of a return authorization by ATI.

No warranties, express or implied, other than those specifically set forth herein shall be applicable to any equipment manufactured or furnished by ATI and the foregoing warranty shall constitute the Buyer's sole right and remedy. In no event does ATI assume any liability for consequential damages, or for loss, damage or expense directly or indirectly arising from the use of ATI products, or any inability to use them either separately or in combination with other equipment or materials or from any other cause.

Air Techniques International
Division of ***Hamilton Associates, Inc***
Owings Mills, MD U.S.A.

Model _____ Serial Number _____Date Purchased _____

Purchaser _____

AIR TECHNIQUES

11403 Cronridge Drive
Owings Mills, Maryland
21117-2247

Design and Manufacture of Custom and Standard Test Equipment for HEPA Filters, Respiratory Protection and NBC Defense

Phone 410 . 363 . 9696
Fax 410 . 363 . 9695

ATI PSL-220 MSDS

Section I – Chemical Product and Company Information

Product Name: ATI PSL-220
Preparation Date: 3/02/01

Air Techniques International
Revision Date: 7/11/2002

Address: 11403 Cronridge Drive
Owings Mills, MD 21117-2247
Telephone: (410) 363-9696

Emergency Telephone Number: Chemtrec 1-800-424-9300

Section II - Hazardous Ingredients/Identity Information

None

Section III Physical/Chemical Characteristics

Boiling Point: 212°F
Specific Gravity: 1.00 @ 60°F
Vapor Pressure @ 20°C: 17.5 mm Hg
Vapor Density: 0.624 @ 80°F
Solubility in Water: Miscible
Appearance and Odor: Milky Emulsion, Slight Odor
Freezing Point: 32°F
pH @ 5%: 7 - 8

Section IV Fire & Explosion Data

Flash Point: None
Method Used: N/A

Flammable Limits in air % by volume: N/A
Auto-Ignition Temp;

UEL: N/A
LEL: N/A

Extinguisher Media: Carbon dioxide, Dry chemical, Foam, Water spray

Special Firefighting Procedures: Isolate fire area and deny unnecessary entry. Use water spray, dry chemical, foam or carbon dioxide.

Unusual Fire and Explosion Hazards: Product will not burn until water has evaporated. Residue can burn. Perform only those firefighting procedures for which you have been trained. Firefighters should wear self-contained breathing apparatus in the positive pressure mode with a full-face piece where there is a possibility of exposure to smoke, fumes or hazardous decomposition products.

National Fire Protection Association (NFPA): Health 1 Flammability 0 Reactivity 0
Other n/a

Section V Physical Hazards (Reactivity Data)

Stability: Stable **X** Unstable

Conditions to Avoid: Contact with heat, sparks, flame and all sources of ignition.

Incompatibility: None Known.

Hazardous Decomposition Products: Carbon dioxide, carbon monoxide, hydrocarbons, oxides of nitrogen and dense smoke.

Hazardous Polymerization: May occur Will not occur **X**

Section VI Health Hazards

Signs and Symptoms of Exposure

Eyes: May cause slight transient (temporary) eye irritation.

Skin Absorption: No acute effects known.

Skin Contact: May cause skin irritation.

Inhalation: This material is not considered to be hazardous under normal conditions of use. Exposure to mist or spray may cause irritation of respiratory passages.

Ingestion: May cause gastric disturbances.

Oral LD 50 > 5,000 mg/kg (Rat)

Chronic Effects: None known.

Emergency and First Aid Procedures

Eyes: Flush with large amounts of cold water for at least 15 minutes. Do not let victim rub eyes. If irritation develops, contact a physician immediately.

Skin: Wash affected area with soap and water. Remove and launder contaminated clothing before reuse. If irritation develops, seek medical attention.

Inhalation: If inhaled, move to fresh air. If victim has stopped breathing give artificial respiration, preferably, mouth to mouth. Contact a physician immediately.

Ingestion: If swallowed, dilute with water and immediately induce vomiting. Never give fluids or induce vomiting if the victim is unconscious or having convulsions. Seek immediate medical attention.

Section VII Special Precautions / Spill & Leak Procedures

Handling: No special precautions necessary. Avoid container damage while handling.

Storage: Store in closed containers in a cool, dry well ventilated area. Maintain closure of bungs. Store at temperatures between 40^{o}F and 110^{o}F. May coagulate if frozen at 32°F. Do not reuse container. Avoid container damage while storing. Product may develop bacteria odor during long-term storage. No safety problems known.

Spill & Leak Response: Do not allow spilled material to enter sewers or streams. Add dry material to absorb (if large spill, dike to contain). Using recommended protective equipment, pick up bulk of spill and containerize for recovery or disposal. Flush area with water to remove residues.

Waste Disposal: All recovered material should be packaged, labeled, transported and disposed or reclaimed in conformance with Good Engineering Practices. Comply with all applicable governmental regulations. Avoid land filling of liquids. Reclaim where possible.

Section VIII Special Protection Information

Respiratory Protection: Not applicable with adequate ventilation. Local exhaust ventilation may be necessary for some applications.

Protective Gloves: Wear rubber gloves.

Eye Protection: Safety glasses with side shields or chemical goggles. Do not wear contact lenses.

Other Protective Wear: Wear impervious, protective clothing including rubber safety shoes to avoid skin contact.

Work Practices: Read label for instructions in use of product.

Section IX Other Hazard Information

None

Section X Additional Regulatory Information

OSHA (Occupational Safety, and Health Administration)
29 CFR 1910.1200 Hazardous Chemical: no

SARA (Superfund Amendment and Reauthorization Act)

Section 311: Hazardous Chemical - no
- Immediate - no
- Delayed - no
- Fire - no
- Sudden Release - no
- Reactive - no

Section 313: Toxic Chemical - no

TSCA (Toxic Substance Control Act)

All of the ingredients in this product are listed on the TSCA Inventory.

California Proposition 65

This product contains no listed substances known to the State of California to cause cancer, birth defects, or other reproductive harm, at levels, which would require a warning under the statute.

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