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INTENDED USE & PRODUCT SCOPE STATEMENT

Aquis™ High-Purity PVDF Spray, Dispense & Nitrogen Guns (ASG / ADG / ANG)

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PURPOSE OF THIS DOCUMENT

This statement defines the intended use, materials of construction, and engineering reference data for the Marquest Scientific Aquis™ product line. It is provided to assist OEM integrators, distributors, and end-use facilities in selecting and applying these products correctly. **It clarifies what the Aquis line is designed and supplied for, and where responsibility for application suitability and process validation resides.**

PRODUCT DESCRIPTION

The Aquis™ line delivers contamination-free dispensing of high-purity water, corrosive chemicals, and inert gases through precision-molded, virgin high-purity PVDF gun bodies with one-piece Modified PTFE poppets. All wetted paths are free of metals, elastomers, and lubricants. Guns are available gun-only or as complete assemblies with FEP, PFA, PU, or PTFE hoses and matched high-purity fittings.

Series	Description & Typical Point-of-Use Application
Aquis ASG	Spray Guns — self-draining spray head for DI/RO/UPW and chemical spray rinsing. Common point-of-use DI rinse device on reprocessing and ultrasonic cleaning sinks.
Aquis ADG	Dispense Guns — extended nozzle for splash-free container filling with DI water, chemicals, and high-purity fluids.
Aquis ANG	Nitrogen Guns — integral 0.80-micron filtration and OSHA-compliant pressure relief for contamination-free nitrogen / inert gas blow-off and drying.

MATERIALS OF CONSTRUCTION

Component	Material of Construction
Gun Body	Virgin high-purity PVDF (Solef®), precision injection-molded
Poppet / Seal	One-piece Modified PTFE multi-purpose poppet
Return Spring	316 stainless steel (non-wetted)
Lever Handle / Hook	Black PVDF (non-wetted); hook adjustable / removable
Elastomers / Lubricants	None — no wetted metals, no elastomers, no lubricants
Hose Options (assemblies)	FEP, PFA, PU, or PTFE with matched high-purity fittings

INTENDED USE

The Aquis™ guns are industrial high-purity fluid- and gas-handling devices intended for point-of-use dispensing, spraying, and rinsing of high-purity water and compatible chemistries, and for filtered inert-gas blow-off and drying (ANG). Representative applications include:

- Deionized (DI), RO, distilled, and ultra-filtered (UPW) water spray rinsing and dispensing
- Chemical spray rinsing and container filling of PVDF-compatible media
- Point-of-use DI water rinsing integrated by OEMs onto reprocessing sinks, ultrasonic cleaning sinks, and laboratory fixtures
- Filtered nitrogen / inert-gas blow-off and component drying (Aquis ANG, with integral 0.80-micron filtration and OSHA-compliant pressure relief)

ENGINEERING REFERENCE DATA — DISPENSE GUN (ADG)

The dispense gun (ADG) discharges through a single open extended nozzle, so volumetric flow rate is a meaningful, repeatable parameter. The values below are based on in-house flow testing of the ADG with water. They are engineering reference values for product selection — not certified or validated performance ratings.

Parameter	L/min	GPM	Basis
Operating Pressure Range	—	—	1 – 150 PSI (product cut sheet)
Flow @ 70 PSI (full open)	8.0	2.11	Measured — in-house flow test ♦
Flow @ 60 PSI (full open)	≈ 7.4	≈ 1.96	Derived from measured data †
Flow @ 80 PSI (full open)	≈ 8.6	≈ 2.26	Derived from measured data †

♦ Measured at full-open (100%) valve position using water. In-house flow testing recorded approximately 8.0 L/min (≈ 2.11 GPM) at 70 PSI. Flow is strongly non-linear with valve position: delivered flow remains near zero through roughly the first quarter of lever travel, then rises steeply toward full open.

† The 60 PSI and 80 PSI values are derived from the measured 70 PSI result using the standard square-root pressure relationship for a fixed orifice ($Q_2 = Q_1 \times \sqrt{(P_2 \div P_1)}$). These are estimates. Actual delivered flow varies with tubing size and length, inlet fitting, facility supply pressure, pressure drop across the assembly, and the degree to which the gun is opened. Delivered flow should be verified under actual installation conditions.

SPRAY GUN (ASG) — PATTERN VS. FLOW

The spray gun (ASG) discharges through an orifice plate with a pattern of holes engineered to produce a defined spray pattern for rinsing coverage. For this product the governing performance characteristic is the spray pattern and coverage, not a precise volumetric flow rate. **Total delivered volume is a consequence of the pattern design, depends on the specific orifice plate, and is not a controlled specification.** Where a defined volumetric flow rate is required, the dispense gun (ADG) is the appropriate product.

SCOPE, LIMITATIONS & RESPONSIBILITY

Not a medical device. The Aquis™ product line is not a medical device and is not represented, cleared, registered, or validated for medical, surgical, or instrument-reprocessing use.

Marquest Scientific manufactures and supplies the Aquis™ guns as industrial high-purity fluid- and gas-handling components. Where an Aquis gun is used as a point-of-use DI water rinse device within a cleaning, decontamination, or reprocessing workflow, it functions solely as a utility dispensing component of that workflow.

Marquest Scientific does not publish, certify, or warrant flow rates, cleaning efficacy, sterility, biocompatibility, or compliance with medical-device or reprocessing standards (for example, ANSI/AAMI ST79) for these products. No Instructions for Use (IFU) or process-validation document is offered for medical instrument cleaning applications.

> Selection of the product for a given application, and validation of the complete process — including delivered water volume, water quality, temperature, cleaning chemistry, and conformance to applicable standards — are the responsibility of the OEM integrator and the end-use facility, performed under their own quality system.

OPERATING LIMITS & COMPATIBILITY

- Maximum operating pressure: 150 PSI. Do not exceed rated pressure.
- Wetted materials (PVDF / Modified PTFE) determine chemical compatibility; confirm media compatibility before use.
- Aquis ANG nitrogen guns include a 0.80-micron filter element requiring periodic replacement; see the nitrogen gun datasheet.
- Products are manufactured and assembled in the U.S.A. and are BABA compliant.

REFERENCE DOCUMENTS

Aquis Spray Guns (ASG), Dispense Guns (ADG), and Nitrogen Guns (ANG) product cut sheets and datasheets are available at www.marquestscientific.com/products/aquis-guns. For application or selection support, contact Marquest Scientific engineering at **sales@marquestscientific.com** or (714) 491-9191.

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