H-4239A

Hydrometer Waterbath

Humboldt Hydrometer Water Bath

The Humboldt Hydrometer Water Bath is designed to provide a 68°F (20°C) ambient temperature throughout the unit by using a microprocessor-based temperature control. The H-4239A water bath is fully-insulated and includes a circulating pump, which ensures a constant water temperature throughout bath.

The H-4239A Water bath provides:

- Fast & effortless auto-tuning of temperatures
- Simultaneously shows the set point and process temperature on its dual-digital display
- Smoothly handles critical temperature processes with ramp-to-setpoint
- Processes and equipment are protected by set point range limiting
- Percent power limit protects components from stress
- Rapid cycling provides fast system response
- Operator lockout guards against unwanted changes
- All exposed parts are stainless steel, and the front panel is water and corrosion resistant

Models covered in this manual include:

- Hydrometer Jar Water Bath, 110V 50/60Hz— H-4239A
- Hydrometer Jar Water Bath, 220V 50/60Hz— H-4239A.4F

Microprocessor-based temperature control for precise temperature control throughout the range. Includes a circulating pump, ensuring constant water temperature, and, a stainless steel shelf, which stands 2" (51mm) above the bottom of the unit for free circulation of water above and below test samples.

Tank Volume: 20.5 gallons (77.6 Liters)

Dimensions: ID: 37"L x 8"W x 16"D (940 x 203 x406 mm)

Overall dimensions: 48"L x 11"W x 19"D (1220 x 280 x483 mm)

Meets ASTM D422; AASHTO T88. Shipping wt. 47 lbs. (21.4kg)

Product Description

This product is intended for use only in accordance with the directions and specifications contained in this User Guide. While the Humboldt Hydrometer Jar Water Bath can be used for many uses within labs, it was designed specifically for use in providing a consistent temperature bath for storing hydrometer jars in accordance with ASTM D422, AASHTO T88 and UNE 103.102 to determine the
particle size distribution of very fine materials, such as silt and clay. The control processor in the H-4239A provides a consistant bath temperature of 68°F (20°C)
accurate to within 0.1% of input span ±1°F.

The Humboldt Hydrometer Jar Water Bath is fully insulated to help easily maintain constant temperature. The H-4239A can accommodate (8) hydrometer jars at a time. All models include a stainless steel shelf, which supports specimens while allowing 2" of free circulating water above and below specimens;
a chiller, and all necessary tubes and connections.

Initial Installation

Your Humboldt water bath was thoroughly inspected and tested prior to being shipped and should be ready to operate once initial installation procedures are completed.

To begin, please remove all packaging. Water baths are packed, one to a box, with the bath, shelf, and tubes and connections. The chiller unit for the bath is shipped in a separate box. Inspect all components and make sure they are free of any damage, which could have occurred during shipping. If shipping damage is observed, please contact Humboldt or your local agent and file a claim with any carriers involved.

Your Humboldt water bath should be placed on a table or bench that is level. Check unit for power requirements and connect the line cord plug into a suitable electrical outlet.

Slowly fill the bath with water. The water level should be approximately 2" (50mm) from the top when hydrometer jars are placed in the bath.

Every Humboldt hydrometer jar water bath is calibrated to a certified thermometer to ensure accurate temperatures during operation. In most cases you should not need to recalibrate you water bath. However, if you need to access the controller for calibration purposes, please contact Humboldt for step-by-step directions.

WARNING

UNIT SHOULD NEVER BE USED WITH LESS THAN 8 INCHES (200mm) OF WATER FROM THE TOP OF THE SHELF. IF THE UNIT IS EMPTIED WHEN HOT, IMMEDIATELY REFILL WITH A MINIMUM OF 8 INCHES (200mm) OF WATER

Operation

Once set-up has been completed and the water bath has been filled with water.

The bath is ready for operation.

To power on the unit, FIRST, turn on the power for the chiller. This switch is located at the bottom of the back of the chiller. This switch can be left on, as the operation of the chiller is controlled by the controller located on the water bath. However, if this switch is not turned on, the unit will not cool.

Once the chiller has been turned on, Push the POWER switch down on the water bath to turn the controller on. The heating indicator to the left of the POWER switch will illuminate and show you the current temperature of the bath on top of the controller in red and the current set point, on the bottom in green.

Use the arrows on the controller to set the desired temperature you would like to operate the bath at, i.e. the set point. The set point is indicated by the bottom number on the control, which is in green. Humboldt Hydrometer Jar Water Baths

are capable of heating and cooling the bath.

Once you have set the setpoint for the bath, either the heating element or the cooler will begin to heat or cool the bath. This will be indicated by a flashing light to the right of the actual temperature reading, the top number on the controller. Once the bath temperature has stabilized at the desired temperature, the thermostat will call on the heater or the cooler to maintain that temperature.

Typical time to cool a bath from 85°F (30°C) to 68°F (20°C) is 4 hours.

Digital Controller Factory Setup

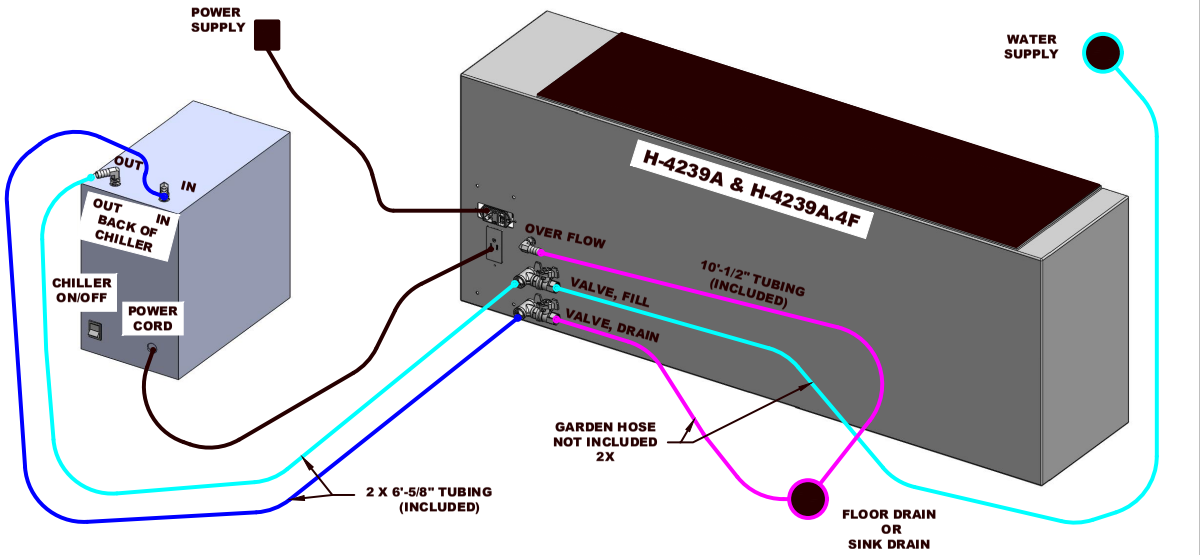
H-4239A, Hydrometer Jar Water Bath, 110V 50/60Hz models come set to °F

H-4239A.4F, Hydrometer Jar Water Bath, 220V 50/60Hz models come set to °C

If you desire to change this setting, hold the two arrow buttons in at the same time and hold for 5-10 seconds. Pushing the blue scroll button allows the display to advance to the next setting, while using the up and down arrows you can change the actual setting.

WARNING

UNIT SHOULD NEVER BE USED WITH LESS THAN 8 INCHES (200mm) OF WATER FROM THE TOP OF THE SHELF. IF THE UNIT IS EMPTIED WHEN HOT, IMMEDIATELY REFILL WITH A MINIMUM OF 8 INCHES (200mm) OF WATER



ELECTRICAL WIRES

WATER LINE INTO TANK

CHILLED WATER LINE TO TANK

DRAIN LINES FROM TANK

FILLING: OPEN TOP VALVE
OPERATION: CLOSE BOTH VALVES
DRAINING: OPEN BOTTOM VALVE

DO NOT SCALE
UNLESS OTHER SPECIFIED
.XX DIMENSIONS MAY VARY +/-.010
.XXX DIMENSIONS MAY VARY +/-.005
FRACTIONAL DIMENSIONS MAY VARY +/-.015
ANGLES MAY VARY +/-1/2deg.

REVISIONS

LTR	DESCRIPTION	CBN	BY	DATE
A	RELEASE	--	AC	04-18-23
B				
C				
D				
E				

HUMBOLDT MFG. CO.
ELGIN, ILLINOIS 60123 USA

TITLE: **HYDROMETER JAR BATH PLUMBING DIAGRAM**

DRAWN: AC
APPROVED: BT

H-4239A
H-4239A.4F

REV. A

Warranty

Humboldt Mfg. Co. warrants its products to be free from defects in material or workmanship. The exclusive remedy for this warranty is Humboldt Mfg. Co., factory replacement of any part or parts of such product, for the warranty of this product please refer to Humboldt Mfg. Co. catalog on Terms and Conditions of Sale. The purchaser is responsible for the transportation charges. Humboldt Mfg. Co. shall not be responsible under this warranty if the goods have been improperly maintained, installed, operated or the goods have been altered or modified so as to adversely affect the operation, use performance or durability or so as to change their intended use. The Humboldt Mfg. Co. liability under the warranty contained in this clause is limited to the repair or replacement of defective goods and making good, defective workmanship.

Humboldt Mfg. Co.
875 Tollgate Road
Elgin, Illinois 60123 U.S.A.

U.S.A. Toll Free: 1.800.544.7220
Voice: 1.708.456.6300
Fax: 1.708.456.0137
Email: hmc@humboldtmfg.com

SECTION 1: Identification

1.1 Product identifier

Product name **H-4247**

1.2 Other means of identification
Sodium Hexametaphosphate

1.3 Recommended use of the chemical and restrictions on use
Analytical Testing Reagent

1.4 Supplier's details

Name

Humboldt Manufacturing Company

Address **875 Tollgate Road, Elgin, IL 60123**

Telephone Non-Emergency: (708) 456-6300

1.4 Manufacturer's details

Name
Address **890 Lively Blvd., Wood Dale IL 60191**

Telephone Non-Emergency: 630-238-9292

1.5 Emergency phone number(s) **800-424-9300 CHEMTREC®**

SECTION 2: Hazard identification

General hazard statement
To the best of our knowledge, this Safety Data Sheet is prepared to comply with US OSHA 29 CFR1910.1200 and other governmental agencies, both domestic and foreign. Hazard and precautionary statements are based on maximum listed concentrations of each hazardous ingredient. Unlisted ingredients are not "hazardous" per the OSHA Hazard Communication Standard (29 CFR 1910.1200) and/or other governmental agencies.

2.1 Classification of the substance or mixture

GHS classification in accordance with: (US) OSHA (29 CFR 1910.1200)

- Eye damage/irritation, Cat. 2
- Skin corrosion/irritation, Cat. 2
- Acute toxicity Oral, Cat. 5
- Specific target organ toxicity (repeated exposure), Cat. 1

2.2 GHS label elements, including precautionary statements.

Pictogram

Irritant

Signal word **Warning**

Hazard statement(s)

H303	May be harmful if swallowed.
H315	Causes skin irritation.
H320	Causes eye irritation.
H335	May cause respiratory irritation.

Precautionary statement(s)

P261	Avoid breathing dust/fume/gas/mist/vapors/spray.
P264	Wash hands thoroughly after handling.
P270	Do not eat, drink, or smoke when using this product.
P280	Wear protective gloves/protective clothing/eye protection/face protection.
P301+P312	IF SWALLOWED: Call a POISON CENTER /doctor if you feel unwell.
P301+P330+P331	IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
P302+P352	IF ON SKIN: Wash with plenty of water/...
P304+P340	IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do. Continue rinsing.
P314	Get medical advice/attention if you feel unwell.
P332+P313	If skin irritation occurs: Get medical advice/attention.
P337+P313	If eye irritation persists: Get medical advice/attention.
P362+P364	Take off contaminated clothing and wash it before reuse.
P501	Dispose of contents/container according to state and local regulations

SECTION 3: Composition/information on ingredients

3.2 Product

Components

1. Sodium Hexametaphosphate

Concentration	> 99 % (weight)
Other names / synonyms	Metaphosphoric acid (HPO3), sodium salt (1:1); Polyphosphoric acids, sodium salts; sodium polyphosphate glassy; Metaphosphoric acid, hexadosium salt; SHMP
CAS no.	68915-31-1

- Skin corrosion/irritation, Cat. 2
- Specific target organ toxicity (repeated exposure), Cat. 1
- Serious eye damage/eye irritation, Cat. 2

SECTION 4: First-aid measures

4.1 Description of necessary first-aid measures

General advice	Consult a physician. Show this safety data sheet to the doctor in attendance.
If inhaled	Remove person to fresh air and keep comfortable for breathing. Call a poison center or doctor if you feel unwell. Acute and delayed symptoms and effects: May cause respiratory irritation. Signs/symptoms may include burning pain in the nose and throat, coughing.
In case of skin contact	Take off immediately all contaminated clothing. Rinse skin with water/shower for at least 15 minutes. Call a poison center or doctor if irritation develops or persists. Wash contaminated clothing before reuse. Acute and delayed symptoms and effects: Causes skin irritation. Signs/symptoms may include localized redness, swelling, itching.
In case of eye contact	Rinse cautiously with water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical attention/advice. Acute and delayed symptoms and effects: Causes eye irritation. Signs/symptoms may include redness, swelling, pain, tearing.

If swallowed	Rinse mouth. Do NOT induce vomiting. Immediately call a poison center or doctor. If vomiting occurs naturally, have victim lean forward to reduce the risk of aspiration. Never give anything by mouth to an unconscious person. Call a doctor if you feel unwell. Acute and delayed symptoms and effects: May cause gastrointestinal irritation. Signs/symptoms may include abdominal pain, stomach upset, nausea, vomiting and diarrhea.

4.2 Most important symptoms/effects, acute and delayed.
The most important known symptoms and effects are described in the labelling (see section 2) and/or in section 11.

4.3 Indication of immediate medical attention and special treatment needed, if necessary
After first aid, get appropriate in-plant, paramedic, or community medical support.

SECTION 5: Fire-fighting measures

5.1 Suitable extinguishing media
Use water spray, alcohol-resistant foam, dry chemical, or carbon dioxide.

5.2 Specific hazards arising from the chemical.
None known other than material can splatter above 100ºC/212ºF.

5.3 Special protective actions for fire-fighters
Avoid any skin contact. Effects of contact or inhalation may be delayed. Fire may produce irritating, corrosive and/or toxic gases. Runoff from fire control or dilution water may be corrosive and/or toxic and cause pollution. Wear positive pressure self-contained breathing apparatus (SCBA). Wear chemical protective clothing that is specifically recommended by the manufacturer. It may provide little or no thermal protection. Structural firefighters' protective clothing provides limited protection in fire situations ONLY; it is not effective in spill situations where direct contact with the substance is possible.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment, and emergency procedures
Wear respiratory protection if necessary. Avoid breathing gas, mist, vapor, or spray. Ensure adequate ventilation. Evacuate personnel to safe areas. For personal protection see section 8.

6.2 Environmental precautions
Do not let product enter drains.

6.3 Methods and materials for containment and cleaning up.
Sweep up and shovel into suitable containers for disposal.

Reference to other sections
For disposal see section 13.

SECTION 7: Handling and storage

7.1 Precautions for safe handling
Do not swallow. Avoid breathing mist, vapors, or spray. Wash thoroughly after handling. Do not eat, drink, or smoke when using this product. Use in a well-ventilated area. See Section 8 for information on Personal Protective Equipment.

7.2 Conditions for safe storage, including any incompatibilities.
Store away from incompatible materials. See Section 10 for information on Incompatible Materials. Keep out of the reach of children.

Specific end use(s)
Apart from the uses mentioned in section 1 no other specific uses are stipulated.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

1. Sodium Hexametaphosphate (CAS: 68915-31-1)
PEL-TWA, (Inhalation): 5mg/l (ACGIH)
PEL-TWA (Total dust) 15mg/l (OSHA)
PEL-TWA (Respirable) 5mg/l (OSHA)

8.2 Appropriate engineering controls

Use ventilation adequate to keep exposures (airborne levels of dust, fume, vapor, gas, etc.) below recommended exposure limits.

8.3 Individual protection measures, such as personal protective equipment (PPE)

Pictograms

Eye/face protection
Tightly fitting safety goggles. Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU). Ensure that eyewash stations and/or safety showers are close to the workstation location if working with a concentrated product.

Skin protection
Wear protective gloves. Consult manufacturer specifications for further information.

Body protection
Wear protective clothing. Clothing with full length sleeves and pants should be worn. The type of protective equipment must be selected according to the concentration and amount of dangerous substances at the specific workplace.

Respiratory protection
Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multipurpose combination (US) or type ABEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Thermal hazards
No data available.

Control banding approach
No data available.

Environmental exposure controls
Do not let product enter drains.

SECTION 9: Physical and chemical properties

Information on basic physical and chemical properties

Appearance/form (physical state, color, etc.)	White color granular solid
Odor	Slight odor
Odor threshold	No data available.
pH	Of 1% Solution 7.00
Melting point/freezing point	550ºC/1022ºF
Initial boiling point and boiling range	1500ºC/2732ºF
Flash point	No data available.
Evaporation rate	No data available.
Flammability (solid, gas)	Non-Flammable

Upper/lower flammability limits	No data available.
Upper/lower explosive limits	No data available.
Vapor pressure	No data available.
Vapor density	No data available.
Relative density	No data available.
Solubility(ies)	Infinite at 20ºC
Partition coefficient: n-octanol/water	No data available.
Auto-ignition temperature	No data available.
Decomposition temperature	No data available.
Viscosity	No data available.
Explosive properties	No data available.
Oxidizing properties	No data available.

SECTION 10: Stability and reactivity

10.1 Reactivity
Contact with incompatible materials. Sources of ignition. Exposure to heat.

10.2 Chemical stability
Stable under normal storage conditions.

10.3 Possibility of hazardous reactions
No data available.

10.4 Conditions to avoid.
Excessive temperature, contact with any type of reactive chemicals.

10.5 Incompatible materials
Avoid contact with Strong Alkalis, Oxidizers, or any other type of reactive material.

10.6 Hazardous decomposition products
There are no known hazardous decomposition products for this material unless the material is burned in which case undetermined evolution of toxic gases may occur.

SECTION 11: Toxicological information

Information on toxicological effects

Acute toxicity
Likely Routes of Exposure: Eye contact. Skin contact. Inhalation. Ingestion.
Components:
Sodium Hexaphosphate: LD50 Oral - Mouse - 75520mg/kg
Sodium Hexaphosphate: LD50 Oral - Rat - 3053mg/kg
Symptoms (including delayed and immediate effects):
Inhalation: May cause respiratory irritation. Signs/symptoms may include burning pain in the nose and throat, coughing.
Ingestion: May cause gastrointestinal irritation. Signs/symptoms may include abdominal pain, stomach upset, nausea, vomiting and diarrhea.

Skin corrosion/irritation
Causes skin irritation. Signs/symptoms may include localized redness, swelling, and itching.
Sodium Hexametaphosphate: LD50: Intraperitoneal mouse – 870mg/kg
Sodium Hexametaphosphate: LD50: subcutaneous Mouse – 1300mg/kg
Sodium Hexametaphosphate: LDLo: Intravenous – Rabbit – 140mg/kg

Serious eye damage/irritation
Causes eye irritation. Signs/symptoms may include cloudy appearance of the cornea, chemical burns, severe pain, tearing.

Respiratory or skin sensitization
No data available on product.

Metaphosphoric acid (HPO3), sodium salt (1:1): LC50 Inhalation - Rat - >5mg/l Mist
Sodium Hexametaphosphate: LC50 Inhalation - Rat - >5mg/l Mist

Germ cell mutagenicity
No data available.

Carcinogenicity
This product is or contains a component that is not classifiable as to its carcinogenicity based on its IARC, ACGIH, NTP, or EPA classification.
OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Reproductive toxicity
No data available.

Summary of evaluation of the CMR properties
No data available.

STOT-single exposure
No data available.

STOT-repeated exposure
No data available.

Aspiration hazard
No data available.

Additional information
No data available.

SECTION 12: Ecological information

Toxicity
No data available on product.

Persistence and degradability
No data available on product

Bioaccumulative potential
No data available on product

Mobility in soil
No data available.

Results of PBT and vPvB assessment
PBT/vPvB assessment not available as chemical safety assessment not required/not conducted.

Other adverse effects
No data available.

SECTION 13: Disposal considerations

Disposal of the product
Disposal should be in accordance with applicable Federal, State, and local laws and regulations. Local regulations may be more stringent than State or Federal requirements.

Disposal of contaminated packaging
Dispose of unused products.

Waste treatment
Contact your supplier or a licensed contractor for detailed recommendations. Follow applicable federal, state, and local regulations.

Sewage disposal
The product should not be allowed to enter drains, water courses or the soil.

Other disposal recommendations
Triple rinse the empty containers with water before disposal to recondition or land fill or garbage.

SECTION 14: Transport information

DOT (US)
UN Number: NA
Class: NA
Packing Group: NA
Proper Shipping Name: NON-REGULATED MATERIALS
Reportable quantity (RQ): NA
Marine pollutant: No
Poison inhalation hazard: No

IMDG
UN Number:
Class:
Packing Group:
EMS Number:
Proper Shipping Name:

IATA
UN Number:
Class:
Packing Group:
Proper Shipping Name:

SECTION 15: Regulatory information

15.1 Safety, health, and environmental regulations specific for the product in question

SARA 302 Components
No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 311/312 Hazards
Chronic Health Hazard

SARA 313 Components
This material does not contain chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

Toxic Substances Control Act (TSCA) Inventory
All components of this product are in compliance with the inventory listing requirements of the U.S. Toxic Substances Control Act (TSCA) Chemical Substance Inventory

Massachusetts Right To Know Components
No components are subject to the Massachusetts Right to Know Act.

New Jersey Right To Know Components
No components are subject to the New Jersey Right to Know Act.

Pennsylvania Right To Know Components
No components are subject to the Pennsylvania Right to Know Act.

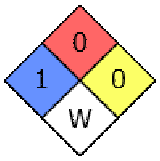
California Prop. 65 Components
This product does not contain any chemicals known to the State of California to cause cancer, birth defects, or any other reproductive harm.

Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA):
This material, as supplied, does not contain one or more substances regulated as a hazardous substance under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302) RQ: Not listed.

HMIS Rating

H-4247	
HEALTH	1
FLAMMABILITY	0
PHYSICAL HAZARD	0
PERSONAL PROTECTION	B

NFPA Rating



SECTION 16: Other information

16.1 Further information/disclaimer

DISCLAIMER: The information above is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigation to determine the suitability of information for their purposes. In no event shall manufacturer be liable for any claims, losses, or damages of any third party or for lost profits or any special, indirect, incidental, consequential or exemplary damages, whatsoever arising, even if manufacturer has been advised of the possibility of such damages.