



J.T.Baker® CYCLE-TAINER™ Solvent Delivery System

TROUBLESHOOTING GUIDE

ISO	Phillipsburg, NJ 9001:2008 & 14001:2004	Gliwice, Poland 9001:2008 & 17025:2005
	Paris, KY 9001:2008	Selangor, Malaysia 9001:2008
	Mexico City, Mexico 9001:2008	Dehradun, India 9001:2008, 14001:2004 & 13485:2003
	Deventer, the Netherlands 9001:2008, 14001:2004 & 13485:2003	Mumbai, India 9001:2008 & 17025:2005

Avantor™ Performance Materials

Avantor Performance Materials manufactures and markets high-performance chemistries and materials around the world under several respected brand names, including the J.T.Baker®, Macron Fine Chemicals™, Rankem™, BeneSphera™ and POCH™ brands.

Avantor products are used in a wide range of industries. Our biomedical and life science solutions are used in academic, industry and quality control laboratories for research, pharmaceutical production and medical lab testing, while our electronics solutions are used in the manufacturing of semiconductors.

For additional information please visit www.avantormaterials.com or follow [www.twitter.com/avantor_news](https://twitter.com/avantor_news)



Ordering Information and Assistance

Customer Service

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E-MAIL: info@avantormaterials.com
www.avantormaterials.com

ASK Avantor™

Our Web site features ASK Avantor,™ which includes live chat capabilities with customer service representatives.
www.avantormaterials.com/askavantor

Corporate Headquarters

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Worldwide Locations

• China	• Malaysia	• North America
• India	• Mexico	• Poland
• Korea	• The Netherlands	• Taiwan

For contact information at these locations, visit www.avantormaterials.com/WorldwideDirectory





Warnings and Cautions

Please read carefully and observe the information and/or directives in these statements. See below for an explanation of these statements.

- **CAUTION** – Statements will indicate potentially hazardous operating procedures.

- **WARNING** – Statements will highlight regulatory requirements.

CAUTION: Do not pressurize the container with compressed air or oxygen. Failure to observe this caution could result in an explosive situation, which can cause severe injuries to personnel.

CAUTION: Check the weight restrictions for your forklift or hand-operated fork truck before moving the CYCLE-TAINER system. Most lifting equipment is designed to lift up to a designated weight.

WARNING: Local regulatory agencies, building codes, and safety policies may require that you attach the container to vent lines during operation. The vent lines attach to the Pressure Relief Valve (PRV) and the Pressure Rupture Disk (PRDA) (if applicable).

CAUTION: EXPLOSION HAZARD- You must ground the CYCLE-TAINER system during operation.

CAUTION: Ensure that CYCLE-TAINER systems are secure during handling to prevent accidental loss of control of the container. This may result in injury to personnel and/or damage to the container.

CAUTION: Never mount or store a container horizontally. Do not stack containers on top of each other

CAUTION: DO NOT DROP CONTAINER. This may damage the container or burst the rupture disk rendering the container inoperable.

CAUTION: When direct feeding to instrumentation and when applicable, the setup should have its main solvent supply valve closed to prevent unintentional solvent surges or down-line releases when the CYCLE-TAINER system is pressurized.

CAUTION: All metal supply and distribution lines should be electrically earth grounded. Storage areas must provide electrical earth ground connections for all containers while in use.

CAUTION: Ensure your gas supply is routed through a high quality stainless steel pressure regulator. The regulator output pressure must not exceed 40 psig for ASME-certified containers; 15 psig for non-ASME certified containers; 5 psig for 1250 L containers manufactured prior to October 1998; 19 psig for 1250 L containers manufactured after October 1998. These pressures represent maximum working pressures of the CYCLE-TAINER systems.

CAUTION: To avoid possible ignition or explosion to toxic/flammable vapors, we recommend the pressure relief output be directed to a hood or other proper venting location. If an external vent line is used, ensure it does not restrict gas flow from the pressure relief device or create a vacuum against the pressure relief device.

CAUTION: Initially turn on the toggle valve slowly to release gas trapped inside the hose. When you release the lever, solvent flow will stop.

WARNING: WHEN USING THE CYCLE-TAP SAMPLER, NEVER DEPRESS THE PLUNGER WHEN THE SYRINGE IS ATTACHED TO THE SAMPLER. THIS MAY INTRODUCE CONTAMINANTS INTO THE CYCLE-TAINER SYSTEM.

CAUTION: Do not exceed operating pressure of the CYCLE-TAINER system.

CAUTION: When direct feeding to instrumentation, DO NOT OVERPRESSURIZE the input line to the instrument - damage to the instrument may occur. Consult the instrument manufacturer operation manual or a technical service representative for the proper feed pressure.

WARNING: If you know or suspect that foreign substances were introduced into the container, quarantine the container and call Customer Service at 1-855-AVANTOR for assistance. Do not return the container without first contacting Avantor to avoid violations of Federal and/or State laws.

WARNING: Never tamper with the container components. Promptly report any container malfunctions to Customer Service at 1-855-AVANTOR.



CYCLE-TAINER™ System Troubleshooting Guide

Returnable solvent delivery systems are a proven and popular method for solvent use; however, they are more complex than traditional bottles and pails. For that reason, Avantor has compiled a quick reference guide to assist you in troubleshooting minor issues that may arise.

	Problem	Caused by	Resolution
Product purity fails specifications	When sampled directly from the container	Contamination in the sampling device	Resample the container. Make sure your sampling apparatus has been thoroughly flushed or rinsed with the product you are using.
Product purity fails specifications	When sampled directly from the container	Problem with analytical methods or techniques	Contact the Avantor Technical Service department to obtain the analytical method used by Avantor. Resample and retest using the same analytical method used by Avantor.
Product purity fails specifications	When sampled at point of end use, i.e., after solvent has flowed through your plumbing system.	Contamination within the plumbing system	Sample material directly from the container and analyze. If the sample meets requirements, there is contamination within your plumbing system. Flush your plumbing lines thoroughly with the product and purity grade you will be using. Continue flushing until it meets analytical specifications at the end use location. For new plumbing installations, see note below. Note: Most valves, fittings, and regulators contain trace amounts of lubricants when received from the factory. We recommend disassembly and thorough cleaning of these items with the product you will be using before their installation in your system.
Product flow problems	No or low product flow	No or low inert gas supply	Check the pressure gauges on gas cylinder or source to ensure an adequate supply is available. Replace the gas tank, if needed.
Product flow problems	No or low product flow	Gas or solvent supply valves closed	Check to ensure the gas and solvent valves in your system are open. Open the valves, if needed.
Product flow problems	No or low product flow	Pressure regulator malfunction	Check both the inlet and outlet pressures on all solvent and gas regulators. Adjust pressure regulator controls. If adequate pressure is seen on inlet side of regulator and outlet pressure does not respond to adjustment, repair or replace regulator.
Product flow problems	No or low product flow	Clogged in-line gas or solvent filter	Check all solvent and gas filters for proper flow. Replace any that might be clogged or malfunctioning.
Product flow problems	No or low product flow	Obstruction in solvent lines	Verify the solvent flow at various points throughout your plumbing system. Start with a point closest to the container and work your way toward the dispensing area. This will help you pinpoint the area that is obstructed. Repair or replace any obstructed or kinked tubing and/or pipes.

Note: this document is meant to be a quick-reference troubleshooting guide for minor issues and does not take the place of following official safety protocols and instructions for the CYCLE-TAINER™ solvent delivery system. If you have questions not covered by this document, please contact the Avantor™ Performance Materials Technical Service Team for assistance at 1-800-669-8230.



	Problem	Caused by	Resolution
Product flow problems	No or low product flow	Malfunctioning Pressure Relief Valve(PRV) or Rupture Disk Assembly(PRDA)	Check to see if gas is leaking from the PRV or PRDA. If gas is leaking from these areas turn the gas supply off and contact Avantor Technical Service Department for assistance.
Product flow problems	Gas, instead of solvent, is discharged from the container dispenser	Empty the CYCLE-TAINER container	Check to see if there is any solvent left in the container. If it is empty, replace the empty container with a full container.
Product flow problems	Excessive gas bubbles in product supply lines	The type of inert gas used (Argon, helium, nitrogen)	Check to see which type of gas is being used. Argon is the least soluble of the three recommended gases. If helium and nitrogen are being used and excessive bubbling is observed, try argon gas since it is least likely to cause bubbling.
Product flow problems	Excessive gas bubbles in product supply lines	Outgassing of dissolved gas from the solvent	Pressurize and dispense product from the CYCLE-TAINER container at the same temperature as the end use. Cool temperatures at a storage and pressurization point promote higher gas solution. This can result in outgassing (bubbles) at a warmer end use location.
Product flow problems	Excessive gas bubbles in product supply lines	Gas pressure is too high	If solvent pressure regulation is used in your system, minimize the pressure drop between the container gas pressure and the regulated solvent pressure. If the container gas pressure is too high, it unnecessarily increases gas solution in the product.
Product flow problems	Excessive gas bubbles in product supply lines	Outgassing of dissolved gas from the solvent	Install a gas accumulator in your solvent line as close to the point of end use as practical.
Product flow problems	Excessive gas bubbles in product supply lines	Outgassing of dissolved gas from the solvent	Install a 1 micron or smaller dispersion filter in the solvent line.
Incorrect container instrument readings	Volume readings are erratic or display is blank on the Liquid Level Indicator (LLI) cube	Incompatible LLI cube for the container	Check the label on the front of the LLI to see which container type (C or S) the cube is designed for. If the label says S, then a type S container must be used. If the cube is labeled type C, then it should only be used with a type C container.
Incorrect container instrument readings	Volume readings are erratic or display is blank on the LLI	Poor plug connection	Check to ensure male and female connectors on the container and LLI signal line are properly mated. Reconnect the cable, if needed, to re-secure the connection.
Incorrect container instrument readings	Volume readings are erratic or display is blank on the LLI	Bent pins on the LLI cable	Check to ensure male connectors on the LLI signal line are not bent or broken. If they are bent or broken, please call Avantor Customer Service at 1-800-582-2537 for a replacement.
Incorrect container instrument readings	Volume readings are erratic or display is blank on the LLI	Dead batteries	Open the Indicator by unscrewing the four recessed screws on the front panel. Replace the two batteries with 9-volt alkaline batteries. Caution: Do not tamper with or remove electronic chip from its holder. Reattach front panel.
Incorrect container instrument readings	Pressure gauge reads zero upon container receipt	Conditions during transit	Container is shipped with a blanket of high purity gas on the solvent. Gas going into solution and temperature fluctuations during transit may cause the gauge to read near zero (0). The solvent integrity will be maintained as long as the container will hold pressure upon use.



	Problem	Caused by	Resolution
Incorrect container instrument readings	Pressure gauge reads zero upon applying gas to the container	Various	Refer to "product flow problems" above.
Quick-connect problems	Quick-connects will not easily connect or will not connect at all	Vapor lock	Hydroscopic pressure between the valve and the male stem may have built up. Open the valve and let the container sit a few minutes. Then try to reconnect the quick-connects.
Quick-connect problems	Quick-connects will not easily connect or will not connect at all	Incompatible quick-connect bodies	For solvent connections, if the color band on the male quick-connect stem does not match that on the female quick-connect body the parts will not connect together. Use a female quick- connect body that is the same color as the male stem.
Container malfunction	Quick-connects or container valves malfunction or leak	Defective or broken part or accessory	Contact Avantor Customer Service to obtain assistance with returning the container for repair.
Container malfunction	Container pressure relief valve malfunctioning or leaking	Defective or broken part or accessory	Contact Avantor Customer Service to obtain assistance with returning the container for repair.
Container malfunction	Other damages to container (other than normal wear and tear)	Defective or broken part or accessory	Contact Avantor Customer Service to obtain assistance with returning the container for repair.
Container malfunction	Quality seals are broken or missing upon receipt of the container	Defective or broken part or accessory	Contact Avantor Customer Service to obtain assistance with returning the container for repair.



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