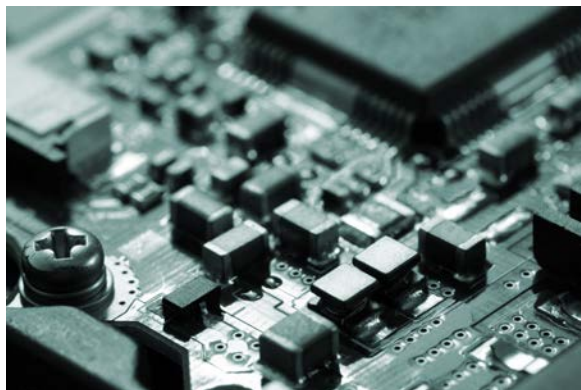


# CYBERSOLV® 141-R

## *Precision Solvent Cleaner*

CYBERSOLV 141-R is a precision cleaner blend of organic solvents that is safe and ready to use for bench-top electronics cleaning. CYBERSOLV 141-R is effective on a wide variety of flux typically found in electronic assembly applications.



- **Proven Global Install Base**
- **Low Odor**
- **Brilliant Solder Joints**
- **Effective on Today's Modern Flux Residues**
- **Replacement for n-propyl bromide (nPB)**

*The information contained herein is based on available data from reliable sources and is accurate to the best of KYZEN Corporation's knowledge at the time of this publication. KYZEN makes no warranty, expressed or implied, of merchantability or fitness for a particular purpose, course of performance or usage of trade. The user is solely responsible for determining the suitability and completeness of such information for their particular application and for adopting appropriate safety precautions. Physical properties listed within are typical values based on samples tested and should not be construed as guaranteed analysis of any specific lot or as specifications for the product. Other factors may involve additional safety or performance considerations- refer to the KYZEN product Safety Data Sheet (SDS) for complete safety information. This data is not to be taken as a warranty or representation for which KYZEN assumes legal or financial responsibility.*

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## PRODUCT DESCRIPTION

CYBERSOLV 141-R is a non-flammable, solvent-based cleaning fluid designed to remove rosin, resin and synthetic polymeric flux residues from electronic circuitry. Applications include: precision cleaning in the electronics and computer components industries, aerosol cleaning (high-end precision parts).

CYBERSOLV 141-R dissolves rosin and low residue flux residues and then readily evaporates after the cleaning application. CYBERSOLV 141-R is designed for bench-top cleaning needs and is ideally suited for cleaning through-hole and SMT electronic assemblies, connectors, cables and hybrid circuits. The product is excellent for spot cleaning flux and is commonly used to clean solder joints following hand soldering. After cleaning, a rinse using clean 141-R is required for a residue and flux free assembly.

CYBERSOLV 141-R has a very low surface tension and can be used to clean narrow traces and under some component gaps.

The solvents used in CYBERSOLV 141-R contain an azeotropic blend containing a mild fluorinated hydrocarbons in combination with trans-1,2-Dichloroethylene - CAS# 156-60-5. This engineered solvent blend is non-flammable in aerosol, electronic, metal and precision cleaning applications.

The solvents that make up CYBERSOLV 141-R are low in odor, toxicity and non-ozone depleting and EPA SNAP approved. CYBERSOLV 141-R also meets RoHS and REACH directives.

While effective on many NC and Rosin flux formulas, the product is not recommend for cleaning WS (OA) fluxes.

## CHEMICAL AND PHYSICAL PROPERTIES

This KYZEN product is environmentally responsible and operator safe, when handled in accordance with good industrial hygiene and safety practices. *Table 1* summarizes important chemical and physical properties of this product.

<b>Table 1: Typical Chemical and Physical Properties</b>		
<b>Parameter</b>	<b>100% Concentrate</b>	<b>Special Values</b>
Clarity	Clear	
Color	Colorless	
Odor	Solvent	
Flash Point, (TCC)	None	
Boiling Point, °F/°C	107°F/42°C	
Volatile Organic Compound (VOC) gm/L EPA Method 24	1097	
Vapor Pressure, VOC Components, mmHg at 20°C	316.7	
Chemical Oxygen Demand, (COD), mg/L (ppm)		Not Detected <sup>1</sup>
Specific Gravity	1.264	
Weight/gallon	10.5	
Non-volatile Residue (NVR) %	0.0%	

<sup>1</sup> Value measured at 0.01% Dilution.

## PRODUCT USE DIRECTIONS

CYBERSOLV 141-R is designed for bench-top cleaning applications and is available in both bulk and aerosolized versions. Good ventilation is essential when using this product. It is also advisable to notify contact lens wearers to remove them. Product use directions specific to these versions are detailed below.

### AEROSOL

KYZEN partners with a third-party vendor to aerosolize cans of CYBERSOLV 141-R. The propellant used in aerosolized cans of CYBERSOLV 141-R is non-ozone depleting and is non-reactive, having no effect on product quality and performance.



1. Spray a small amount of CYBERSOLV 141-R on the board, wetting the residues.
2. Gently scrub the board with the brush attachment until the residues dissolve. Spraying a small amount of CYBERSOLV 141-R will help loosen stubborn contaminants; spraying continuously is not necessary.
3. Once the residues dissolve, spray a small amount of CYBERSOLV 141-R to rinse the board.
4. After rinsing, CYBERSOLV 141-R will dry quickly and residue free.

*CYBERSOLV 141-R includes a brush attachment for cleaning with one hand, allowing the user to hold the PCB with the other hand.*

### BULK

Bulk liquid forms of CYBERSOLV 141-R are ready to use, requiring no dilution and no heat. Containers should be stored with the lid tightly closed to prevent evaporation.



*For best results, use two separate glass or steel bottles containing CYBERSOLV 141-R: one for washing and one for rinsing. DO NOT USE COMMON COLORED PLASTIC ESD CONTAINERS*

1. Apply a small amount of CYBERSOLV 141-R on the board, wetting the residues.
2. Gently scrub the board with an acid brush until the residues dissolve. Periodically applying a small amount of CYBERSOLV 141-R will help loosen contaminants.
3. Once the residues dissolve, use a clean brush to apply a small amount of CYBERSOLV 141-R to rinse the board.
4. After rinsing, CYBERSOLV 141-R will dry quickly and residue free.



## COMPATIBILITY INFORMATION - SUBSTRATES AND EQUIPMENT

All chemicals have the potential to adversely affect substrates and process equipment. As such, the effects of short-term exposure for substrates common to parts and assemblies and the effects of long-term exposure for materials of equipment construction must be considered. Tables 2, 3 and 4 summarize known compatibility recommendations regarding the use of this product with specific substrates. These compatibility recommendations are based on internet research of 141-R's major formulation materials and internal KYZEN testing on the product as a whole of commonly available materials. Elastomers and plastics can vary greatly in quality. Metals, elastomers and plastics can vary greatly in quality. For the most accurate results on long-term exposure of your materials, it is advised to perform additional testing.

**Table 2: Plastics and Elastomers**

Brand Name	Generic Description	141-R
Delrin™	Acetal	B
Acrylic	Acrylic	D
Nylon 6/6	Polyamide	A
Lexan™	Polycarbonate resin	D
ABS Plastic	Acrylonitrile butadiene styrene	D
PEEK	Polyetherether Ketone	E
PVC	Polyvinyl Co-polymer	C
Natural Rubber	Black rubber	D
NORYL®	PPO™ resin and polystyrene	E
Neoprene	Polychloroprene	A
PPS (Ryton®)	Polyphenylene sulfide	E
PTFE (Teflon™)	Polytetrafluoroethylene	A
Kalrez® 4079	ASTM D395B: FFKM (FFPM)	A
Kynar™	Polyvinyl fluoride	E
Aflas	Tetrafluoroethylene and Propylene	E
Tefzel™	Ethylene/tetrafluoroethylene copolymer	A
Polypropylene	Polypropylene	A
Hypalon®	Chlorosulfonated Polyethylene (CSPE)	B
Chemraz®	Perfluoroelastomer (FFKM)	E
Alathon™	High density polyethylene	A
Viton A or B	Fluoroelastomer	D
Low density polyethylene	Polyethylene	A
Ultem™	Polyether imide	D
Silicone Rubber	Silicone Rubber	A
CPVC	Chlorinated Polyvinyl Chloride	A
Buna-S	Styrene Butadiene	C
Buna-N	Styrene Nitrile Copolymer	C
Kel-F® / Neoflon®	PolyChloroTriFluoEthylene (PCTFE)	E
EPDM	Ethylene Propylene Diene Monomers	A

**Table 3: Metals and Alloys**

Substrate	141-R
2024 Aluminum- Bare	A
2024 Aluminum- Alclad	A
2024 Aluminum- Anodized	A
Black Anodized Aluminum	A
3003, 6061 and 7075 Aluminum	A
7075 Aluminum- Alclad	A
Silver	A
Gold	A
Copper	A
1018 Steel	A
304 and 316 Stainless Steel	A
Titanium	A
Steel, Galvanized	A
Tin-Lead Based Alloys	A
Tin-Copper Based Alloys	A
Tin-Silver-Copper Based Alloys	A
Bismuth-Tin Based Alloys	A

**Ratings - Chemical Effect - 168 hours**

A - Excellent

B - Good: Minor Effect, slight corrosion, or discoloration.

C - Fair: Moderate Effect, not recommended

for continuous use. Softening or loss of strength, and swelling may occur.

D - Severe Effect: Not recommended for any use.

E - Test / Information not available.

**Explanation of Footnotes**

1-Satisfactory to 72°F (22°C)

2-Satisfactory to 120°F (48°C)

3-Repeated wash exposure beyond a typical process cycle time can lead to discoloration or etching of the surface.

**Table 4: Equipment**

**When considering long-term exposure for materials of equipment construction, the following materials are generally compatible with chemistries used for inline and batch cleaning systems: (listed in order of resilience)**

Type	Compatibility
EXHAUST	Stainless Steel, Polypropylene, CPVC or Galvanized Steel
PUMP SEALS, O-RINGS, GASKETS	Teflon <sup>™</sup> , Teflon <sup>™</sup> encapsulated or EPDM (EPR) Note: Viton is not recommended.
PLUMBING LINES	Stainless steel
CURTAINS	Polypropylene or Reinforced Silicone (red)
WINDOW / DOOR SEALS	EPDM or Silicone (red)
RTV	Dow Corning 732 or similar high grade

### **SHELF-LIFE**

Retain samples are taken from every product batch and kept for a minimum of five years. Additionally, randomly selected retain samples of key products are maintained indefinitely. KYZEN determined the shelf life of our aqueous and non- aqueous products by closely monitoring the quality of product samples stored in these retain samples over time. The results of this study provided valuable information on the stability of our products over time.

**With few exceptions\*, KYZEN products are acceptable for use up to FIVE (5) years, when packaged in sealed containers of five gallons or greater.**

Conversely, it is more difficult to predict the long-term integrity of a product in containers holding less than five gallons, as well as unsealed containers of any size. Smaller product containers and unsealed containers are more susceptible to contamination and evaporation, which preclude extended expiration dates. Capping opened containers when not in use can minimize contamination and evaporation. Exceptions to shelf-life are clearly documented on product-specific Certificates of Compliance.

### **PRODUCT COLOR**

For all KYZEN products, *color does not indicate product quality*; therefore, color is not used as a quality control parameter or specification for final product evaluation. KYZEN products are made from a blend of raw materials, some of which are organic solvents derived from agricultural materials. After 25 years of collecting data on KYZEN products containing these raw materials, studies have shown that these materials can contribute to color variances in concentrated and diluted product, as well as slight color variations over time. These same studies confirm that while *color changes may occur*, *product quality is unaffected*. To assure product quality, KYZEN evaluates each lot of these raw materials to verify integrity before blending.

### **STORAGE**

Store this product in the original container at temperatures between 5-30°C / 41-86°F indoors, or out of direct sunlight. Most products have a freezing point much lower than water and a very high boiling point; therefore, most KYZEN products do not require any special handling to address temperature changes. KYZEN conducts freeze/thaw studies on all products to determine if product quality is affected by such factors and completes further testing if necessary. Following best practices always use the oldest inventory first and keep your stock rotating. *Exceptions to storage temperature requirements are clearly documented on product-specific Certificates of Compliance.*

### **HANDLING**

This product is environmentally responsible and operator safe, when handled in accordance with good industrial hygiene and safety practices. Refer to the Safety Data Sheet (SDS) regarding safe handling practices with this product. It is always a good practice to wear safety glasses or goggles and nitrile gloves whenever handling 141-R. For transferring bulk liquid of 141-R, pumps are available at <https://www.goatthroat.com/>



## ENVIRONMENTAL CONSIDERATIONS

KYZEN products are generally compatible with common primary and secondary waste treatment processes; however, the addition of soils removed during the cleaning process can significantly escalate environmental concerns. These environmental considerations vary widely depending on the cleaning machine and the operating parameters of your particular cleaning process. As such, the selection of the cleaning agent must incorporate the inherent impact on air emissions, water discharges and waste generation from your facility. Each of these three environmental mediums may require a permit depending on the usage rate and existence of other air emissions, water discharges and waste generation at your facility.

### ***What are KYZEN's responsibilities for proper disposal?***

- The *United States OSHA Hazard Communication Standard* requires suppliers to provide a GHS compliant Safety Data Sheet (SDS) for all products.
- KYZEN is responsible for providing known information on toxicity testing, health hazards, waste disposal, safe work practices, protective equipment, material reactivity and flammability, etc.
- Note: All information needed to properly classify a product for disposal, wastewater treatment or discharge into a wastewater stream can be found in the product SDS, specifically in Sections Three (3), Nine (9), Twelve (12) and Thirteen (13). Therefore, KYZEN does not disclose proprietary, non-hazardous product constituents for this purpose.

### ***What are the end user's responsibilities for proper disposal?***

- It is the user's responsibility to seek guidance and rule interpretation from appropriate authorities before applying for any required permits. This is usually accomplished by providing a copy of the product SDS, supplied by KYZEN, to local authorities. Because local regulations are often more stringent than federal regulations, it is imperative for the user to consult with local regulatory agencies before starting a waste water discharge, or introducing new chemicals or chemical processes to an existing permitted waste water discharge stream.
- The three regulatory agencies that a user must review are federal (national), state (regional), and local. Each company must meet the minimum federal standards. The state regulations may be the same or even more restrictive than the federal. Finally, the local community's regulations will be at least as restrictive as state regulations.
- The discharge of any wastewater stream, both by total flow and by chemical make-up must conform to national, regional and local regulations in all nations. Such regulations vary from very strict limits with little derogation to relatively flexible conditions. Many nations, particularly in Europe, have very strict legal requirements dictated on a national scale, covering many aspects of waste water quality. Other nations have less comprehensive regulations, covering only the more important considerations. Local authorities may offer derogations to national legislation if the local treatment plant is able to handle the otherwise out-of-tolerance waste.

**The end user is ultimately responsible for compliance with all applicable regulations.**



**Your KYZEN Representative is available to  
assist you throughout your cleaning process.**

**KYZEN Technical Support  
1-800-845-5524**

**[https://www.kyzen.com/  
contact-us/](https://www.kyzen.com/contact-us/)**

*Materials furnished under all KYZEN orders are manufactured in accordance with KYZEN Corporation specifications. KYZEN maintains documentation of conformance to these specifications, which is available for review upon request. All raw materials used in KYZEN products are obtained from suppliers on KYZEN's Approved Vendor List (AVL), pursuant to ISO certified standard operating procedures for raw material quality control.*