



What is Mirachem QX-424 Newspaper Pressroom & Maintenance Cleaner?

QX-424 is an advanced aqueous (water based) cleaner developed specifically to clean ink and other organic soils in newspaper printing operations. Formulated with *Quatix*[™] technology, QX-424 delivers exceptional cleaning performance with advanced safety and material compatibility benefits. QX-424 has been engineered to be used in multiple on and off-press cleaning applications, including blanket and roller washing, press maintenance and rebuilding, parts washing and general cleaning. QX-424 defines a new standard in low-VOC pressroom cleaning.

Why should I choose QX-424?

QX-424 is the premier product in Mirachem's line of cleaning technology for the printing industry. It delivers the superior performance that Mirachem users have come to expect, the safety and compatibility of aqueous cleaners, and the cost effectiveness of Quatix technology.

QX-424 offers the following features and benefits:

- Excellent Performance: You don't have to trade cleaning efficiency for safety and material compatibility benefits.
- Less Expensive: This product is made using newer technology and manufacturing processes, so it costs less.
- Use-Cost Effective: QX-424 is concentrated, allowing you dilute with water and use only the amount of product you need.
- Regulatory Compliance: Quatix-based products are formulated to meet current and future environmental regulations.
- Material Compatibility: This formula is safe to use on a variety of substrates, and will not corrode ferrous metal surfaces.
- Non-Soy: QX-424 is not based on soy chemistry, eliminating the associated rinsing, compatibility and slip-and-fall issues.
- Reduced Risk Management Exposure: Advanced safety attributes reduce injury, regulatory and pollution risks.

What is *Quatix*[™] Technology?

Quatix represents the latest advances in aqueous cleaning chemistry and the next wave of Mirachem leading-edge technology. Developed from years of in-the-field experience and scientific study, Quatix products set a new standard of performance and safety for cleaning products.

Specific attributes of a Quatix product vary depending on their specialized use. All Quatix formulations, however, have been engineered to meet several criteria, including:

- Better performance, with dramatic superiority over outdated chemistries, and even improvements versus our comparably positioned legacy technologies.
- Increased environmental compliance, because of products being designed to meet environmental standards likely to be implemented through the year 2015.
- Improved material compatibility and worker safety, attributed to using newer and more advanced base materials.
- Improved cost efficiency, by taking advantage of the latest technological advances and formulating to modern market conditions and financial structures.

For additional information on the Quatix technology, please refer to Mirachem's Quatix Technology Technical Release.

What does QX-424 clean?

This product is designed to remove organic soils (materials originating from the chemical element carbon) commonly found in litho (lithography, offset), flexo (flexography), and screen printing processes, particularly in the newspaper pressroom environment. Soils that will be removed by QX-424 include:

- Ink
- Lint
- Paper dust
- Grease
- Hydraulic Fluid
- Lubricants
- Dirt & Grime
- Oil

On what can I use QX-424?

QX-424 can be used to clean a variety of surfaces and substrate materials, including a variety of elastomers, polymers, monomers, and composites created from these materials. Some specific examples include:

- Acrylic
- Aluminum
- Aluminum Alloys
- BR (*butadiene rubber*)
- Buna
- Carbon Composites
- Carbon Steel
- Chrome
- Concrete
- EPDM* (*Ethylene Propylene Diene Monomer*)
- EP70
- Fiberglass
- HNBR / HSN (*Hydrogenated Nitrile Butadiene Rubber or Highly Saturated Nitrile*)
- Hypalon® (*Chlorosulfonated Polyethylene*)
- Natural Rubber
- Neoprene
- Nitrile
- Painted Surfaces
- Polyethylene and Polypropylene
- Polyurethane
- Plastics
- SBR (*Styrene-Butadiene Rubber*)
- Silicones
- Stone, Brick, Masonry
- Stainless Steel
- Urethane
- Viton

* EPDM is often mis-abbreviated as "EDPM".

What are some common cleaning applications where QX-424 is used?

QX-424 is used in many cleaning applications found in the printing industry. These include:

- Blanket Cleaning
- Ink Cans / Trays
- Ink Rails / Hoses
- Floor Cleaning
- Gates
- General Cleaning / Wipe Down
- Mist Guards
- QC / Lab Cleanup
- Page Packs
- Parts Washing
- Pipe Rollers
- Press Maintenance
- Press Refurbishment
- Roller Washing
- Spray Bars
- Water Pans

How is QX-424 different from other cleaners?

Unlike traditional solvent, high-alkaline or soy based pressroom chemistries, QX-424 delivers effective cleaning, improved worker safety, material compatibility and advanced environmental compliance. QX-424 will address the needs of both the press operator and the environmental health and safety manager.

How is QX-424 different from Mirachem Pressroom Cleaner?

Mirachem Pressroom Cleaner was Mirachem's premier printing cleaner prior to the development of QX-424. Based on Mirachem's legacy technology, Pressroom Cleaner has been a significant part of Mirachem's product lineup for many years. Both products are designed for the same type of uses, and in most applications, can be used interchangeably.

Because of the technological and chemistry advances put to use during the development of QX-424, this product is less expensive to manufacture than Pressroom Cleaner, and can typically be used at greater dilutions. This translates to QX-424's cost of use being less than that of Pressroom Cleaner in most operations.

QX-424, as a Quatix product, is also positioned to meet environmental standards likely to be implemented through the year 2015. The Pressroom Cleaner technology, having been developed over 20 years ago, meets today's common regulatory standards, but will likely be outpaced by future changes.

Current Pressroom Cleaner users who do not wish to convert into QX-424, perhaps due to the cost of product conversion or re-qualification, can certainly continue to use Pressroom Cleaner. Over an extended period QX-424 is intended to replace Pressroom Cleaner, however, Mirachem has no plans at this time to discontinue or otherwise reduce the availability the current product.

How does QX-424 work?

QX-424 is an aqueous (water based) cleaning product. Normally, many sticky soils, such as ink or oil, cannot be solubilized (suspended in solution) in water. This is the origin of the adage "oil and water don't mix". As with most Mirachem technologies, QX-424 makes water "wetter", allowing it to penetrate chemical structures that would normally repel water, and allowing water to go into suspension with normally non-soluble materials.

QX-424 allows water to break the sticky bonds between soils and surfaces, allowing them to be safely rinsed or wiped away. By using QX-424, water becomes the final cleaning agent.

What is the "secret ingredient" in QX-424?

All Mirachem product formulations are proprietary and are a closely guarded trade secret. QX-424's formulation can generally be described as a proprietary non-soy detergent blend that does not contain any phosphates, petroleum distillates, or chlorinated (halogenated) or hydrocarbon solvents.

Mirachem's unique combination of performance and safety are not as much about "secret ingredients" as they are about innovative development and manufacturing techniques, and our commitment to develop comprehensive cleaning solutions. Our products are the result of extensive experience in the field and exhaustive laboratory development and testing, an expensive and time consuming process. Most companies that sell cleaning chemistries are unable or unwilling to undertake similar development processes because it is easier and much less expensive to simply market the existing commodity formulas. Mirachem focuses its energies on finding ways to take basic cleaning elements, such as water, heat or agitation, and making them efficient enough to outperform hazardous chemistries.

The result of our approach is a quality product offering that is truly different, rather than an exhaustive line of "me too" chemicals that offer no real advantages.

Customers with a requirement for more detailed ingredient information should contact Mirachem to discuss their specific needs.

Who uses QX-424?

QX-424 was developed for the printing industry in general, and specifically, newspapers. The product will be useful in any printing operation, including:

- Metropolitan Dailies
- Syndicated Newspapers
- Local & Regional Weeklies
- Classified and "Sell It Yourself" Publications
- Directory and "Yellow Pages" Publishers
- Quick Printers
- Corporate Print Shops
- Schools & Universities
- Government Printing Operations
- Company or Newspaper Mailrooms

What types of cleaning activities are appropriate for using QX-424?

- Blanket Cleaning
- Off-Press Parts Cleaning
- In-Place/On-Press Cleaning
- Roller Cleaning*
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* QX-424 is a water-based product. Applying QX-424 directly to the paper train in a web offset operation will likely result in a web break. For more information, please refer to the section titled "Do I Have to Change My Cleaning Process to use QX-424?"

What are the methods of application?

- Spray & Wipe
- Bucket & Rag
- Parts Washer*
- Soak, Dip, Immersion Tanks
- Mop & Bucket
- Ride-on or Walk-behind Floor Scrubbers
- Pressure Washers

Parts cleaning is an application where Mirachem products are used frequently with great success. Please refer to Mirachem's Cleaning Process Reference Guide on parts cleaning for specific information relating to this cleaning activity.

How do you use the product?

There are four components involved in efficient cleaning with an aqueous technology. They are:

- Time
- Agitation
- Concentration
- Temperature

Or, TACT, for short. By adjusting these variables to optimum value, the performance of an aqueous cleaning solution can be maximized.

Time

The longer the cleaning solution remains in contact with the soil, the more cleaning efficiency you will get from the cleaner. This is commonly called *dwelt time*.

Agitation

The addition of *kinetic energy* (movement) to the cleaning process aids any cleaning activity. Common forms of agitation include brushing, scrubbing, wiping, spraying, or even a flow of fluid across a surface.

Concentration

Most aqueous cleaning technologies are designed to be diluted with water to deliver cost savings. Often, the more concentrated (also described as *less dilute*) the product used, the better the cleaning efficiency. In the case of QX-424, this is usually the case. However, some applications will require a less concentrated (*more dilute*) solution for better performance.

Temperature

As in the case of kinetic energy, the addition of *caloric energy* (heat) can make cleaning more efficient. As with any water based cleaner, including your washing machine or dishwasher at home, warmer water will improve cleaning performance.

Mirachem recommends that users always read the Material Safety Data Sheet (*MSDS*) before using any cleaning products.

What is the recommended dwell time?

For hand wipe applications or mop and bucket applications, we recommend applying the product and allowing 5-10 seconds for the product to emulsify the soil. In general, the longer the dwell time, the less agitation will be required. Please ensure that the surface stays wet while the product loosens deposits.

For soaking, or applications, timing is generally from 10 to 30 minutes. More difficult soils and encrusted deposits may take longer. Under most circumstances, soak times in excess of three (3) hours are not recommended.

What are the concentration parameters?

Below are some basic concentration suggestions; we encourage you to try several dilutions to find the precise concentration for your specific cleaning needs.

<u>Cleaning Method</u>	<u>Dilution (QX-424:water)</u>
- Spray & Wipe	Full strength to 5:1
- Bucket & Towel	1:1 to 10:1
- Parts Washing	2:1 to 4:1
- Soak / Dip Tanks	2:1 to 6:1
- Mop & Bucket Cleaning	10:1 & Higher
- Pressure Washing	20:1 & Higher

<u>Application</u>	<u>Dilution (QX-424:water)</u>
- Blanket Washing	1:1 to 10:1
- Roller Cleaning	1:1 to 10:1
- Floor Scrubbing (Automated)	20:1 & Higher
- Heavy Duty Cleaning	1:1 – 3:1
- Ink Rails	1:1 – 3:1
- Spray Bars	1:1 – 3:1
- Janitorial	5:1 – 10:1
- Press Frames	5:1 – 10:1

What are the temperature parameters?

Please keep in mind that QX-424 is a water-based technology; it will evaporate like water. Increased use temperatures will increase the rate of evaporation. Use caution when working with extremely elevated temperatures. Do not exceed manufacturer’s recommended temperature for your equipment.

We recommend using QX-424 at:

- Spray & Wipe	Ambient to 100°F
- Bucket & Towel	Ambient to 105°F
- Parts Washing	105° to 110°F
- Soak / Dip Tanks	105° to 165°F
- Mop & Bucket	Ambient to 105°F

What are Mirachem’s “Printing” products?

Mirachem has developed several product lines designed to meet specific types of cleaning needs. These include our Printing, Industrial, Commercial, Professional and Specialty lines.

Our printing products have been developed to offer customers the maximum benefit from Mirachem’s 20+ years experience in printing cleaning, and to underscore our commitment to the industry. These products are designed to be effective in multiple printing applications, deliver industry-specific material compatibility requirements and provide unsurpassed environmental safety and regulatory compliance.

Products in Mirachem's Industrial line are high performance cleaning technologies designed to be used in a wide range of cleaning applications, and are formulated to be effective at removing multiple soils. Our industrial products also offer the greatest cost effectiveness by allowing one product technology to be used to address virtually all cleaning applications that an industrial operation might encounter. Industrial line products are backed by extensive technical support and have been certified compliant with many industry, regulatory and OEM standards.

If your requirements call for a specific use product in a cleaning application that does not demand advanced technical support or top-of-the-line performance, we recommend our Commercial line of products. For janitorial and general duty cleaning applications, Mirachem's Professional line is likely to be the most cost effective choice. If you have an unusual cleaning need that doesn't fit traditional cleaning categories, look to our Specialty line for assistance.

What kind of results can I expect when using QX-424?

QX-424 will leave a clean, residue free surface. QX-424 will not leave an oily residue, common with solvent or soy-based chemistries, or alkaline deposits, common with high alkaline products. This product rinses easily and cleanly. QX-424 includes an advanced corrosion protection package to ensure compatibility with ferrous metal surfaces.

What are the storage requirements?

QX-424 is a water-based technology, and will freeze like water. We recommend that the product be protected from extreme high or low temperatures. Do not store in direct sunlight. If the product freezes, allow to thaw completely and mix thoroughly. Since Mirachem is non-hazardous, it does not require any special permitting or equipment to store in your facility.

What is the shelf life?

QX-424 has a guaranteed shelf life of 5 years from date of manufacture.

How do you dispose of QX-424?

Waste disposal is a necessary part of cleaning. The points to remember when considering waste are:

- He who controls the hazard, owns the risk
- Where you are located determines the guidelines
- If you have a hazard, you have responsibility
- The responsibility never goes away

If you are currently using a hazardous product, your responsibility for what happens to the waste material does not end when it is removed from your facility. It has always been a goal of Mirachem to help customers reduce or eliminate the costs and liabilities associated with their cleaning products. Using Mirachem instead of traditional, higher-risk products can help to reduce the costs of waste transportation and disposal, fees and permitting, recordkeeping and manpower.

Unused QX-424 in its concentrated form would be categorized as a Federal non-RCRA (Resource Conservation and Recovery Act, (42 U.S.C. 6901-6992), waste, and in nearly all jurisdictions, can be sewer disposed in accordance with federal, state and local regulations.

Once used, the QX-424 solution contains additional components that have come out of the cleaning process, and will, in all likelihood, no longer have the same waste characteristics of the unused product. The proper course of action is to have your waste streams analyzed by a reputable firm to determine the exact nature of the waste materials, and therefore, how they should be handled.

A local environmental services or waste transportation company should be able to assist you with obtaining the lab analysis, interpreting the results and handling your waste in an efficient and legally compliant manner. If you need help locating a reputable waste management company, Mirachem may be able to refer you to a local company with whom we have experience.

You may also choose to handle your own waste management needs internally. You can locate an appropriate lab yourself, and local, county, state and Federal agencies can assist you in determining handling and disposal options.

Alternative options, subject to applicable regulations, to off site transport and disposal may include:

- Discharge to local waste water treatment facility
- Utilize waste fluid in other third party processes that may qualify as a recycling procedure
- Evaporation or minimization
- On-site treatment

For additional information, please refer to the QX-424 Newspaper Pressroom & Maintenance Cleaner Material Safety Data Sheet (MSDS), Section XIII – Disposal Considerations, which available is from Mirachem.

Does my cleaning process have to change to use QX-424?

That depends on your current cleaning process, including products and equipment used, as well as the various steps in the process. There are four major areas to evaluate in answering this question:

Product Technology

If you are converting from a solvent product to an aqueous cleaner, you can expect to make adjustments to both equipment and cleaning processes. Often, equipment designed for use with solvents is incompatible with aqueous technologies. Drying is also often an area that requires modification.

If you are converting from a high-alkaline chemistry to Mirachem, you can reasonably expect to need to make some minor adjustments to equipment, but probably not process.

Parts Washer / Tank Construction

Aqueous cleaners work best when used with equipment constructed of stainless steel, polyethylene or polypropylene. Carbon steel or mild steel construction will eventually corrode, most often due to water vapor being generated above the liquid level by heated equipment.

Corrosion Management Practices

QX-424 contains an advanced corrosion protection package that has been developed to be effective in any printing application. However, as with any water-based technology, some attention to corrosion management may be appropriate.

Solvent cleaners typically “flash dry”, that is, they evaporate (*volatilize*) very quickly in air. Unlike these solvents, aqueous cleaners usually dry at about the same rate as water. Under some circumstances, this increased dry time can lead to potential corrosion issues and may require adjustments to process.

QX-424 also cleans to a film-free surface. Most solvents and high-alkaline formulations leave behind a film or residue which often “accidentally” acts as a corrosion barrier. Users of QX-424 should be aware that unpainted surfaces are cleaned to “bare metal”. In cases of extreme environmental or storage conditions, additional corrosion protection consideration may be appropriate.

Dilution Maintenance

Aqueous cleaners are usually sold as a concentrate, designed to be diluted with water before use. The degree of dilution appropriate for your application will be determined based on four points:

1. Cost - The more dilute, the less it costs to use the product
2. Method of Application - Example: spray & wipe vs. parts washer
3. Product Performance - How fast the product cleans
4. Corrosion Management - The more dilute, the less efficient the corrosion protection

Once the proper dilution level is determined, you will want to exercise some care to maintain this dilution level to ensure consistent, efficient and cost effective cleaning. Mirachem recommends that product be prepared for use at the proper dilution ratio outside of the use container, using some method to ensure accuracy. Estimating is not a recommended dilution method.

Your cleaning application may also be sensitive to changes in dilution. This is common in parts washing applications. Fluid in a heated parts washer will evaporate, and will also "drag out" (small amounts of fluid still left on or in parts) in the course of normal use. For this reason, we again recommend that make-up fluid be pre-diluted before being added to the parts washer.

Does using an environmentally safe cleaning product require a sacrifice in performance?

Not if you choose your product wisely.

Many companies are taking advantage of the current market awareness surrounding environmental issues and cashing in by promoting "green" products. This is especially true in the category of environmentally safe cleaners and chemistries. However, just because a product is marketed as safe, does not mean that it delivers on its claims.

In many markets, regulatory agencies have put restrictions in place that prohibit the use of older chemistries that have been accepted in the industry for many years. Often, vendors will promote their compliance with these regulations as a selling point. Again, the making of these claims does not prove their validity, and even if a product does meet a regulatory requirement, this is no assurance that it will perform in a given application.

It is for these reasons that a stigma has developed concerning environmentally safe products. It is a common perception, especially where cleaners are concerned, that "green" products don't work. While there is certainly cause to question every marketing claim made, there are reputable companies that offer quality products, and they deserve a fair opportunity to take these products to market. In addition, there are numerous benefits that can be realized from adopting a strategic objective of improving the overall environmental safety of any operation.

While it may be necessary to make adjustments in process to achieve satisfactory results with safer technologies, it should not be necessary to impact production efficiency. As with all purchasing decisions, the best course of action is to fully evaluate products to your specific requirements *before* you purchase them.

PRODUCT AVAILABILITY, PURCHASING & LOGISTICS DATA

Product Availability

QX-424 is available in the following package configurations:

- 5-gallon pail
- 55-gallon drum
- 275-gallon tote

Purchasing Information

PART #	PACKAGE DESCRIPTION	FREIGHT STATUS	STOCK STATUS
0101-0424640001	5 Gal Pail	Delivered	Stocked at selected distribution points. (Delivery in 2-6 transit days; average = 3.)
0101-0424055001	55 Gal Drum - Each	Freight Added	Stocked at all distribution points. (Delivery in 1-4 transit days; average = 2.)
0101-0424275001	275 Gal Tote - Each	Freight Added	Stocked at all distribution points. (Delivery in 1-4 transit days; average = 2.)

Logistics Data

ITEM	WEIGHT (lbs)	LENGTH (in)	WIDTH (in)	HEIGHT (in)	FULL PALLET CUBE	PIECES / FULL PALLET	FULL PALLET LENGTH	FULL PALLET WIDTH	FULL PALLET HEIGHT	FREIGHT CLASS	NMFC
Pail	47					42	48	48		55	48580-3
Drum	500					4	48	48		55	48580-3
Tote	2,500					1	40	48		55	48580-3

INDUSTRY & MATERIAL COMPATIBILITY

General Material Compatibility

QX-424 has been formulated to be compatible with all surfaces, equipment and materials found in a pressroom environment. This includes a number of polymers, monomers, and composites created from these materials, as well as the blankets, elastomeric-covered rollers and structures manufactured with these components.

Rotadyne Corporation Material Compatibility Testing

Rotadyne Corporation has conducted materials compatibility testing for their printing roller substrate materials with Mirachem QX-424 at both the concentrated (as is) dilution and a normal use dilution of 3 parts water to 1 part cleaner. It was their conclusion that QX-424 was compatible with all of their roller materials. For specific details, please consult Mirachem's Technical Release titled Rotadyne OEM Material Compatibility Testing.

Base materials tested include:

- EP125
- MV125
- BN25P
- RWM025
- RWM425
- N-2075
- RD125
- RD125-9
- RW125
- RW125-7
- Polydamp

COST EFFECTIVENESS

Business and Tax Incentives

Many states, local jurisdictions, and insurance carriers are introducing tax credits or other incentives for switching to clean air and/or environmentally responsible technologies and processes.

Concentration

QX-424 is a concentrated product that is designed to be diluted with water. By diluting, you pay only for the product that you actually need.

When comparing the cost of cleaning products, remember to evaluate the cost *per use gallon*, as opposed to the actual purchase price. Mirachem offers a Cost Evaluation Worksheet to assist in this process.

Equipment & Material Life

High alkaline and other hazardous cleaners can cause undue wear and tear on cleaned materials, as well as the equipment used in the process. QX-424 compatible with multiple metals, elastomers, polymers and synthetics, including aluminum, natural and synthetic rubber, buna, EPDM, neoprene, BR, nitrile, Hypalon and viton, and can help extend material life. This results in cost savings.

Flexibility

The ability to dilute QX-424 makes this product flexible for uses throughout your facility. With use dilutions of full strength to 10:1, and higher, and usefulness in applications ranging from floor cleaning to repair and maintenance, QX-424 may be the only cleaner / degreaser you need, reducing the cost of multiple vendors and larger inventories.

Manifesting

QX-424 does not constitute a Federal RCRA waste under 40CFR 261.33 and does not require manifesting. Additions to the fluid, such as contaminants being removed in the cleaning process, may alter this waste profile. We recommend that users have a sample of their waste evaluated with a Toxicity Characteristic Leaching Procedure (TCLP) and compare with their local or regional standards. In the State of California, most QX-424 waste streams are considered a "Non-RCRA" or "California Only" waste as defined in the California Health & Safety Code, Chapter 6.5, Section 25117, and may require manifesting.

Personal Protective Equipment (PPE)

Because of Mirachem's advanced worker safety properties, the need for PPE may be eliminated or reduced, which reduces the cost of the overall cleaning process.

Property & Liability Insurance

Eliminating hazardous and/or flammable products from your inventory by replacing them with QX-424 may help reduce your operation's risk characteristics and costs of insurance and risk management.

Recyclable

For those customers who have on site waste treatment/minimization, or have volume to warrant the establishment of a fluid management system, QX-424 is recyclable and/or treatable.

Right to Know Compliance

Since QX-424 does not contain any component materials that require disclosure under the OSHA Hazard Communication Standard (29CFR 1910.1200) or EPA Emergency Planning and Community Right-To-Know regulations (SARA Title III Section 311-312 (42 U.S.C.9601)), costs of manpower and record keeping associated with this area of compliance may be reduced or eliminated.

Toxic Substances Control Act (TSCA)

All components of this product are in compliance with the US Toxic Substances Control Act (TSCA) (15 U.S.C.53).

Transportation Costs

QX-424 ships as NMFC Class 55, Compound Cleaning Fluid, NOI 48580-3, which allows for less expensive shipping charges than hazardous products.

Waste Disposal

QX-424 is a non-hazardous product as defined in 40CFR 261.33, that can usually be disposed of at a lesser cost per gallon than solvent. In addition, minimizing your waste stream(s) may lower your hazardous generator status, and reduce the cost and hassle of regulatory code compliance and record keeping. See the Mirachem Technical Release on this subject or review the MSDS.

Worker Compensation Insurance & Claims

Due to the increased worker safety benefits offered by QX-424, worker exposure to several risks associated with traditional chemistries may be reduced or eliminated. This may have a positive effect on worker's compensation insurance rates and claims.

Worker Training & Administration

Since QX-424 is non-hazardous under OSHA Hazard Communication Standard (29CFR 1910.1200), use of the product requires less worker training and less waste management administration.

Warranty / Guarantee

All Mirachem products carry our manufacturer's warranty, and customer satisfaction is guaranteed. For details, see our Warranty and Guarantee Policy.

ENVIRONMENTAL RESPONSIBILITY

QX-424 is an environmentally responsible product. This helps you meet air, water and pollution standards of EPA and local environmental authorities.

Air Quality

QX-424 is a low VOC, non-hazardous, non-photochemically reactive product that is acceptable for use under the most stringent air quality regulations in the United States. Some air quality authority specifics are included below.

Bay Area Air Quality Management District (BAAQMD), CA

Regulation 8 – Organic Compounds, Rule 16 – Solvent Cleaning Operations

Product used at 1:1 dilution or greater meets 50 g/L

Maricopa County, AZ Air Quality Department

Regulation III, Control of Air Contaminants, Rule 331 – Solvent Cleaning

Product used at full strength qualifies as a conforming solvent as defined in Section 207, and as a low VOC cleaner as defined in Section 291.

Regulation III, Control of Air Contaminants, Rule 337 – Graphic Arts

Full Strength use complies with the requirements of Section 303 – Standards – Cleaning Solutions.

Sacramento Metropolitan Air Quality Management District (SMAQMD), CA

Rule 466 – Solvent Cleaning & Rule 454- Degreasing Operations

Product used at 1:1 dilution or greater meets 50 g/L requirement.

San Diego County, CA Air Quality Pollution Control District

Rule 67.3 – Coating of Metal Parts and Products

Product used at full strength meets 200 g/L requirements.

San Joaquin Air Quality Management District (SJAQMD), CA

Rule 4662 – Organic Solvent Degreasing Operations

Product used at 1:1 dilution or greater meets 50 g/L requirement.

Ventura County, CA Air Pollution Control District (VCAPCD)

Rule 76.G.6 Federally Enforceable Limits on Potential to Emit

Product used at 1:1 dilution or greater meets 50 g/L requirement.

Product used at 2:1 dilution or greater meets 25 g/L requirement.

South Coast Air Quality Management District (SCAQMD), CA

Rule 1171- Solvent Cleaning Operations and Rule 1122 – Solvent Degreasers

Product used at 2:1 dilution or greater meets 25 g/L requirements.

For This Application	To Meet The Requirements of	Use Product At (QX-424:water)
Parts Washing	Rules 1171 and 1122	2:1 dilution or greater
General Cleaning	Rule 1171	2:1 dilution or greater
Flexographic Printing	Rule 1171	2:1 dilution or greater

Packaging Printing	Rule 1171	2:1 dilution or greater
Litho Roller Wash	Rule 1171	Full strength or any appropriate dilution
Off-Press Cleaning	Rule 1171	2:1 dilution or greater
Screen Printing	Rule 1171	Full strength or any appropriate dilution
UV Printing	Rule 1171	Full strength or any appropriate dilution
Specialty Flexo Printing	Rule 1171	2:1 dilution or greater

Biodegradability

QX-424 is manufactured using biodegradable ingredients.

Community Right to Know Compliance

QX-424 is not a hazardous chemical under 29CFR 1910.122 and therefore is not covered by Superfund Amendments and Reauthorization Act (SARA) Title III Section 311-312 (42 U.S.C.9601). QX-424 does not contain a chemical, which is listed in Section 313 at or above de minimis concentrations.

Comprehensive Environmental Response, Compensation and Liability Act (CERCLA)

Releases of this product to air, land, or water are not reportable to the National Response Center under CERCLA (42 U.S.C. s/s 9601) or to state and local emergency planning committees under the Superfund Amendments and Reauthorization Act (SARA), section 304.

Global Warming Compounds

There are no Global Warming Compounds (GWC) in this product.

NFPA (National Fire Prevention Association) Rating

Health = 1 Flammability = 0 Reactivity = 0 Special = 0

Non-Solvent Product

QX-424 is a proprietary non-soy detergent blend that does not contain any phosphates, or chlorinated (halogenated) or hydrocarbon solvents.

NPCA-HMIS (National Paint & Coatings Association – Hazardous Materials Information System) Rating

Health = 1 Flammability = 0 Reactivity = 0 Protective Equipment = None

Ozone Depleting Compounds

QX-424 contains no Ozone Depleting Compounds (ODC) in this product, according to the Montreal Protocol on Substances That Deplete The Ozone Layer (Montreal Protocols).

US Federal Hazard Classification

This product is not a hazardous material as defined in the Federal Hazardous Materials Transportation Law, (49 U.S.C.5103)

US Department of Transportation (USDOT) Classification

This product is not regulated by the USDOT under 49CFR 172.

Volatile Organic Compounds (VOC's) / Vapor Pressure

The VOC content of QX-424 is:

- 75 grams/liter (0.62 pounds/gallon) at full strength
 - 37 g/L (0.31 pounds/gallon) at 1:1 dilution
 - 25 g/L (0.20 pounds/gallon) at 2:1 dilution
- with a partial composite vapor pressure at 20°C of less than 1mm Hg (Mercury).

Volatile Organic Hazardous Air Pollutants

QX-424 contains no Volatile Organic Hazardous Air Pollutants (VOHAP's) as defined by the US Environmental Protection Agency (EPA) in 40CFR 63.

Toxicity

None of the components in this material are considered toxic as defined by:

- International Agency on the Research of Cancer (IARC)
- National Toxicology Program (NTP)
- Occupational Safety & Health Administration (OSHA)
- American Conference of Government of Industrial Hygienists (ACGIH)

Worker Right to Know Compliance

QX-424 does not contain any component materials that require disclosure under the OSHA Hazard Communication Standard (29CFR 1910.1200) or EPA Emergency Planning and Community Right-To-Know regulations (SARA Title III Section 311-312 (42 U.S.C.9601).

WORKER SAFETY

California Proposition 65

This product does not contain any material currently listed by the state of California as a chemical known to cause cancer or known to have reproductive toxicity under Proposition 65 (California Health and Safety Code section 25249.8(a).

Carcinogenicity

None of the components in this material are listed as a carcinogen by:

- International Agency on the Research of Cancer (IARC)
- National Toxicology Program (NTP)
- Occupational Safety & Health Administration (OSHA)
- American Conference of Government of Industrial Hygienists (ACGIH)

Hazard Identification

Eye Contact: May cause mild temporary irritation.

Skin Contact: Prolonged or repeated exposure may cause mild irritation.

Inhalation: No adverse effects expected.

Ingestion: No adverse health effects are anticipated to occur as a result of acute ingestion.

Mild pH

Concentrated QX-424 has a pH of 10 – 10.5. Water is 7 (neutral) on the pH scale of 0-14. In general, products with a pH higher than 12.5 or less than 2 are corrosive. The pH of QX-424 will help avoid potential OSHA compliance issues.

NPCA-HMIS Rating

Health = 1

Flammability = 0

Reactivity = 0

Protective Equipment = None

OSHA Hazard Standard

QX-424 is considered non-hazardous under the OSHA Hazard Communication Standard (29CFR 1910.1200).

Personal Protective Equipment

QX-424 has a mild pH and does not give off harmful vapors. Much of the Personal Protective Equipment (PPE) required for use of traditional chemistries is not needed when using QX-424. As when using any cleaning product, Mirachem recommends using good personal hygiene and work practices.

Please consult the QX-424 Material Safety Data Sheet (MSDS) for more information. Refer to our Product Comparison table to see how other products compare in HMIS rating and safety precautions.

OTHER TECHNICAL INFORMATION

Successor to Mirachem Pressroom Cleaner

Please refer to the section titled "How is QX-424 different from Mirachem Pressroom Cleaner?"