

Shelf Life Extension Product Guide

Desiccants

Oxygen
Absorbers

Indicator
Labels & Cards

Corrosion
Inhibitors

Cold Chain
Solutions

Flexible
Packaging

Shipping
Accessories



Our Mission:

“To offer our customers the latest technology in shelf-life enhancing packaging products while maintaining the highest level of quality, service and affordability in our industry.”



Dry Pak Industries (DPI) is a full service provider of modified atmospheric packaging products for the food, electronics, pharmaceutical, nutraceutical, diagnostics, military and aerospace industries. DPI's array of products focus on extending the shelf life of our customers products, while providing them with the highest level of quality, service, and affordability in the industry. DPI has warehouses throughout the US, and welcomes the opportunity to offer you a one-stop shop for all your shelf life packaging needs.

With over two decades of experience in the packaging industry, DPI's sales staff is trained to assist customers in evaluating and redesigning their packaging in accordance with all MIL Spec, government, and commercial packaging requirements.

Dry Pak Industries Locations



- ★ **Corporate Office**
- **Sales Offices**
- **Warehouses**

In addition DPI has distributors in over 20 countries worldwide.

Dry Pak Industries, Inc.
 16055 Ventura Boulevard, Suite 725
 Encino, CA 91436
 Toll Free Tel: 877-437-9725
 Tel: 818-981-7460
 Fax: 818-981-7463
 E-Mail: info@drypak.com

Dry Pak Online



Check out our website at: **drypak.com** for up-to-date product information.



Check out our consumer product website at: **veritemp.com** for placing small orders.

Desiccants

Packaged and Bulk Desiccants

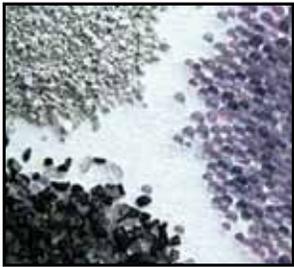
Dry Pak Industries (DPI) provides a full line of packaged desiccants ranging in size from 0.25 grams to 2,500 grams (including 1/6 Unit to 80 Unit sizes).

- Meets all Military Specifications for desiccants (Mil-D-3464, Type I & II)
- Drug Master File Approved (FDA)
- Prevents mold, mildew, rust and corrosion
- Adsorbs moisture and odor inside a packaged environment
- Non-Tearing, Non-Dusting & Non-Linting packets
- Compliant with FDA and USDA guidelines for packaged desiccants
- Available inside the following substrates; Tyvek, Non-Woven, Clear Film, Kraft, Sewn Cloth, and Re-enforced Paper.
- Convenient warehouse locations located throughout the US



The following desiccant materials are available packaged or bulk:

- **Silica Gel** - Beaded or Granular Grades
- **Clay** - Coarse or Fine Grades
- **Molecular Sieve** - Type 3A, 4A, 5A, 13X and others
- **Indicating Silica Gel** (with and without Cobalt Chloride)
- **Potassium Permanganate** (Ethylene Gas Adsorption)
- **Activated Carbon** - Coal and Coconut Grades
- **Activated Alumina** - 1/8, 1/4 and 3/16 inch pellets
- **Specialty Blends** - Silica Gel/Carbon, etc



Continuous Strip Desiccants

Dry Pak offers a complete line of Continuous Strip desiccants for use with high speed desiccant dispensing machines. Continuous Strip desiccants are available in 0.25-gram to 4.0-grams which allow our customers the ability to dispense desiccants on a roll at speeds up to 300 bags per minute. Dry Pak's Continuous Strip desiccants eliminate the need for manual insertion in any high volume desiccant setting, resulting in labor savings, increased output and higher efficiency. Continuous Strip desiccants are available in silica gel, clay, molecular sieve, activated carbon and custom blends.



Canister Desiccants

Dry Pak offers a full line of food grade desiccant canisters ranging in size from 0.5-grams to 4.0-grams. Our high-density poly-ethylene (HDPE) canisters are made with food grade plastic and ink and have been given Drug Master File status by the FDA. Dry Pak's canister desiccants are used by many high volume pharmaceutical customers looking to achieve high speed insertion rates (up to 500 per minute) thereby increasing throughput and reducing overhead costs. Dry Pak's canisters are available in silica gel, clay, molecular sieve, activated carbon, 2 in 1 and custom blends.



Shipping Container Desiccants

Cargo DryPak is a specially formulated desiccant product designed to eliminate condensation inside shipping and storage containers. By eliminating condensation, Cargo DryPak easily protects cargo from mold, mildew, rust and corrosion while goods are in transit. Cargo DryPak is available in two standard sizes: 500 gram Tyvek bags and 1500 gram Sewn Cloth bags with tie strings for customers who prefer to hang Cargo DryPak from the hooks inside containers.



Cargo DryPak's Advantages:

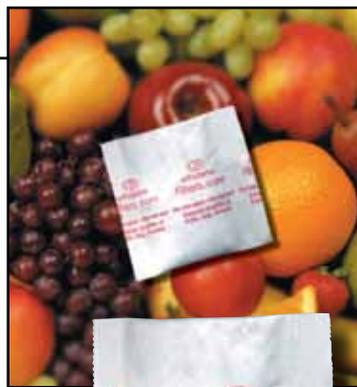
- Ship goods without the threat of "Container Rain"
- Absorbs up to 100% of its weight in moisture
- Provides 50+ days of moisture protection
- Environmentally safe and can be disposed of as normal waste

Applications:

- Ocean, truck, rail & air shipping containers.
- Protection of agricultural commodities, furniture, auto parts, machinery, metal products, corrugated boxes, wood, textiles, leather goods, food products, coffee, cocoa, pet food, canned goods, bottled products, and many other products.
- Ideal for boats & RV's as well as other long term storage applications.

Ethylene Absorbers

Ethylene gas (C₂H₄) is an odorless, colorless gas that exists in nature and is also created by man-made sources. As fruits, vegetables and floral products mature, ethylene gas is released into their packaged environment. In many cases, perishable products (such as fruits, vegetables and flowers) are sensitive to ethylene gas and can ripen or mature quicker when exposed to ethylene gas. In addition, certain fruits and vegetables are high producers of ethylene gas thereby creating the need to separate, ship, or store produce based on their ethylene profile.



Dry Pak's line of ethylene absorbing sachets, filters and films allow shippers of ethylene producing and ethylene sensitive goods to ship and store product without the fear of premature ripening. By removing ethylene from the storage and shipping environment, growers and shippers can reduce spoilage thereby increasing their profit.



Ethylene Absorbing Packets and Filters

Ethylene Absorbing Packets and Filters extend the shelf life of fruits, vegetables and flowers in a packaged or bulk environment. Made with natural occurring zeolites, these products remove unwanted ethylene gas through the oxidation process, thereby ensuring the quality of freshness of the product while in transit or in storage.

Ethylene Absorbing Packets and Filters can be used with a wide variety of agricultural products, including: apples, kiwis, bananas, avocados, onions, citrus, fresh flowers and many others. Ethylene Absorbing Packets are available in three sizes: 5, 10 & 30 grams. Ethylene Filters are available in 3 lb. and 9 lb. sizes. These products can be placed in direct contact with all types of boxes produce or floral commodities.

Ethylene Absorber Films (Peak Fresh®)

DPI offers a complete line of PEAKfresh® Carton Liners, Sheets, Pallet Covers & Storage Bags are used to maintain the freshness and extend the shelf life of many kinds of fruits, vegetables and flowers. PEAKfresh® films contain a mineral that removes ethylene gas.

- Available in all standard and custom roll, bag and liner sizes
- FDA approved for use with food, produce and flower products
- Easy to use and compliant with all packaging methods
- Provides a quick, easy and cost effective way to absorb unwanted ethylene gas



Oxygen Absorbers

Dry Pak Industries offers a complete line of oxygen absorbers designed to remove unwanted oxygen inside a packaged environment. Oxygen absorbers are safe and easy to use with food products such as dried meats, baked goods, dried spices, bulk foods and other foodstuffs. DPI's oxygen absorbers are available in sizes ranging from 20cc to 2000cc in individual packets or continuous strip (roll form).



Oxygen Absorber Advantages:

- Lowers oxygen levels to less than 0.01%
- Available in individual packets or roll form
- Maintains product freshness
- Extends product shelf life
- FDA GRAS Rated: safe for use with food and food related products
- Prevents mold, mildew and bacteria from forming
- Safe & easy to use

Available in the following sizes:

20cc, 30cc, 50cc, 100cc, 200cc, 300cc, 400cc, 500cc, 750cc, 1000cc & 2000cc



Oxygen Indicators

Dry Pak's line of reversible oxygen indicators are small, individually packaged indicators which reveal the presence/absence of oxygen via color change. Our oxygen indicators indicate the lack of oxygen (less than 0.01%)

by turning pink. At an oxygen level of 0.5% or greater the indicator turns blue. The presence of oxygen will be indicated in five minutes or less, while the change from blue to pink may take three hours or more. These indicators are used with food packaging, diagnostics, chemicals and other oxygen sensitive applications.

- Pink = Safe
- Blue = Inspect your packaging

VCI (Volatile Corrosion Inhibitor) Products

Dry Pak Industries (DPI) offers a full line of VCI products including plastic bags (blue), paper sheets, rolls, foam pads, emitters, sprays, wipes, liquid solutions and other corrosion prevention medium. VCI protects ferrous and non-ferrous metals from rust, tarnish, staining, oxidation and corrosion.

We carry the following types of VCI products:

- Plastic Film, Bags & Sheeting
- Stretch Film (roll stock)
- Sachets
- Emitters
- Paper (cut sheets and roll stock)
- Wipes
- Liquids in bulk or spray cans
- Static Shielding Bags
- Foam pads and cushioning
- Foil, Poly, Kraft & all other bag construction materials are available



Moisture Barrier and ESD Bags

Dry Pak Industries offers a full line of standard and custom bags, pouches, films and other moisture barrier and ESD products. We can provide you with finished bags or with roll stock depending upon your requirements. Custom printing is our specialty.

We carry the following types of materials:

- Moisture Barrier Bags - Standard and Customer sizes
- Class I and Class II barrier bags
- Static Shielding Bags (ESD) - Standard and Custom sizes
- Anti Static Reclosable Bags, Bubble Bags, Foam & Stretch Film
- Stand-up food pouches (zip-lock closures or non zip-lock)
- Medical pouches for Diagnostics and other medical parts
- Printed pouches for Food packaging
- Static Shielding Bags

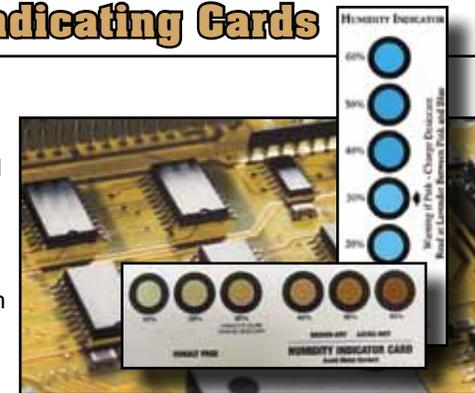
Applications:

- Electronics
- Integrated Circuit and Surface Mount Device Packaging
- Pharmaceuticals
- Diagnostic Test Kits
- Snack Food



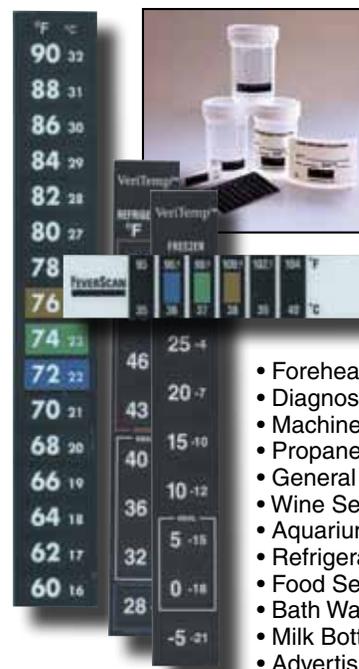
Humidity Indicating Cards

Dry Pak Industries is a full line provider of reversible and irreversible Humidity Indicating Cards (HIC). These color changing cards provide a low cost method of indicating humidity conditions for various types of military, electronic and barrier packaging requirements. All of our standard HIC cards turn from blue to pink to indicate the humidity level within a given environment. We also carry a full line of cobalt chloride free HIC cards which comply with new European regulations.



- Meets Military Specifications (MIL-I-8835 and MS 20003-2)
- Meets JDEC Standard 033 (5-10-15% and 5-10-60% cards)
- A full range of cards that indicate humidity levels from 5% to 60%
- Available in one through six dots
- Used in Electronic, Military, Aerospace, Pharmaceutical, Diagnostic and Optical Component packaging
- Cobalt-free cards are available
- Irreversible HIC Cards are available from 30-90% RH
- Custom sizes and printing also available

Reversible Temperature Indicating Labels



DPI's line of reversible temperature indicating labels are available from -30°C to 120°C. These strips are made out of a polyester (mylar) microencapsulated liquid crystal color changing ink that is accurate +/- 0.5 °C. Used as a method to monitor the current temperature, these labels change colors indicating the actual temperature where the green bar appears. Custom printed reversible temperature labels are available. This technology is widely recognized as the premier way to accurately monitor current temperature in the following applications...

- Forehead Thermometers
- Diagnostic Test Kits (Urine Tests)
- Machine Sealing Verification Labels
- Propane Gas Level Labels
- General Room / Workplace Labels
- Wine Serving Temperature Labels
- Aquarium Labels
- Refrigerator / Freezer Labels
- Food Service / Hospitality / Catering
- Bath Water Labels (for infants)
- Milk Bottle Labels (for infants)
- Advertising / Promotional Labels

Irreversible Temperature Indicating Labels

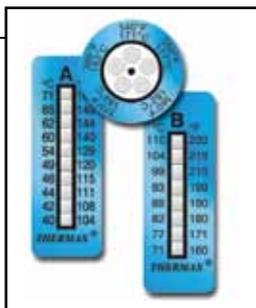
DPI provides a full line of Temperature Indicating Labels, which are used with products that must be stored or transported without exceeding critical temperatures. Excellent for use with food, pharmaceuticals, nutritional products, diagnostic test kits, candy (chocolate), paint, and bulk agricultural commodities.

- Response temperatures available (ranging from -20°C to 290°C, -4°F to 554°F)
- Custom sizes, temperatures, and functionality are available
- Self-adhesive labels apply directly to a product, package, carton or master pack
- Irreversible color change occurs once response temperature is reached or exceeded
- Tamper-proof method of checking temperature while goods are stored or in transit

WarmMark Time Temperature Labels

WarmMark Time Temp Tags are a convenient, accurate tool for monitoring temperature during shipping and storage of drug and medical products, vaccines, blood, plasma, diagnostics, gelatin capsule products, chemicals, paint, and temperature sensitive food products. Adhesive backed tag records warming temperatures for shipping and storage.

- Monitors temperatures from 8 to 48 hours, depending on model.
- Red coloring indicates exposure to warmer-than-acceptable conditions
- Available in a variety of response temperatures ranging from -18°C (0°F) to 37°C (99°F) with an accuracy of $\pm 1^\circ\text{C}$



Thermax Irreversible Temperature Labels

The Thermax Irreversible Temperature labels are a fast, simple temperature monitoring system based on proprietary color changing technology.

- Inexpensive and easy-to-use.
- Immediate response.
- Permanent record of highest temperature.
- Oil, water, and steam resistant.
- Accurate to $\pm 1^\circ\text{C}$ from 29°-154°C (84°-309°F) and 1% of the rated temperature above 154°C (309°F).
- Temperature range 38°-290°C (100°-554°F).
- Labels or strips.
- Silver to black color change.
- Last black event is the highest temperature achieved

ColdMark Freeze Indicating Labels

ColdMark is an irreversible temperature indicating label that provides an indication of temperature movement below a certain temperature threshold. Available in five models (-3°C, 0°C, 2°C, 5°C & 10°C), they utilize a chemically activated, irreversible dye color change that occurs when the monitored environment reaches a low threshold temperature (+/- 1°C). ColdMarks require special thermal packaging with overnight shipping to prevent a false positive reading prior to use.



Shipping Refrigerants (Gel Packs)

Dry Pak Industries offers a full line of shipping refrigerant Gel Packs and Foam Bricks. These products are ideal for use in keeping perishable items cold while in transit or in storage for extended periods of time. All refrigerant packs are made with durable polyethylene or foil substrates that are tightly sealed to ensure maximum resistance to puncturing and splitting. These products are printed with eco-friendly water-based inks. Our Gel Packs and Foam Bricks represent a low cost thermal protection solution for all one-way, round trip and other high volume temperature sensitive shippers.

Standard Gel Packs



Dry Pak's standard Gel Packs provide thermal protection for temperature critical packages during transit and storage. Available in a wide variety of styles and a multitude of sizes (2 oz. to 48 oz.), Gel Packs are designed to provide reliable temperature protection for a vast array of products and packages.

Low Temp Gel Packs

Dry Pak's low temperature Gel Packs provide thermal protection for temperature critical packages during transit and storage. Low Temperature Gel Packs are designed to provide reliable temperature protection for a vast array of products and packages. Available in sizes ranging from 8 oz. to 48 oz.



Sweat Proof Gel Packs



Dry Pak's Sweat-Proof Gel Packs provide thermal protection for temperature critical packages during transit and storage. Sweat-Proof Gel Packs are designed to provide reliable temperature protection without the formation of condensation on the outer surface of the Gel Pack. Available in sizes ranging from 3 oz. to 48 oz.

Foam Bricks

Dry Pak's Foam Brick refrigerants provide thermal protection for temperature critical packages during transit. They are available in sizes ranging from 7.5 oz. to 64 oz. Foam Bricks are semi-rigid refrigerant packs which never change shape during freezing, thawing or transit. Our Foam Bricks maintain designated packing configurations throughout the entire trip. Each brick is vacuum sealed for consistent weight and shape.



Foam Shipping Boxes



DPI's line of EPS foam with corrugate shippers offer the ideal solution for the safe storage and delivery of most refrigerated or frozen products. Designed with EPS foam containers in 200 lb. test corrugated carton, these shipping boxes offer a cost-effective method to ship temperature sensitive products. A large selection of sizes are available in three wall thicknesses providing insulation up to 48 hours.

Strip Chart Temperature Recorders



Dry Pak offers a full line of inexpensive yet highly reliable battery powered time temperature strip chart recorders. These recorders generate a permanent paper chart print-out of the actual temperature conditions that occurred while goods were in-transit. Once the goods reach their destination, the recorder is removed and the chart is easily extracted from the unit.

Dry Pak's strip charts are available in 5, 10, 20, 30, 60 & 90 day run-out times. There are three different temperature range models to suit almost any customer application (Standard, High and Low Temperature models). The accuracy level of these recorders is +/- 1 Deg C.

Applications:

- Ocean, Rail, Truck and Air Shipping Containers
- Produce and Snack Food Products
- Pharmaceuticals
- Nutritional Products
- Diagnostic Test Kits
- Chemicals
- Food Service/Hospitality Industry

Specifications:

- +/- 1 Deg C accuracy
- Visible start-up verification
- Tamper evident seal with bar code and serial number
- Simple to operate
- NIST traceable calibration

Data Loggers

DPI's line of Log Tag data logger temperature recorders are ideal for any customer looking to integrate their cold chain management procedures with the latest in temperature and humidity recording technology. Available in multi-use (Temp only) and multi-use (Temp + Humidity) DPI's Log Tag data loggers will record over 8000 individual data points ranging from -40C to +85C (-40F to + 185F).

Applications:

- Ocean, Rail, Truck and Air Shipping Containers
- Produce and Snack Food Products
- Pharmaceuticals
- Nutritional Products
- Diagnostic Test Kits
- Chemicals
- Cold Storage Facilities
- Food Service/Hospitality Industry

Specifications:

- +/- 0.5 - 0.8 Deg C accuracy
- Built-in start up delays and temperature alarm functionality
- Simple to operate
- 2+ years of battery life
- NIST traceable (CE Mark)
- 21 CFR Part 11 Compliant



Digital / Infrared Thermometers

Dry Pak offers a complete line of easy-to-use handheld digital and infrared thermometers. These devices are designed to show the current temperature and humidity in almost any environment. Dry Pak's digital thermometers accurately display temperature and humidity on a LCD screen with the push of a button. All of these devices are accurate to a level of +/- 1 degree Fahrenheit or better. Below are a few of the models we offer. To see our full line of Digital and Infrared Thermometers go to drypak.com.

Flash Check Digital Pocket Probe Thermometer

This unique, next-generation, digital pocket probe thermometer is engineered to set the industry standard for accuracy, durability and readability. It is designed and constructed under exacting standards to meet and exceed the specifications required for commercial and industrial uses.



- Reduced tip probe provides 300% faster response time than conventional models
- Small-diameter probe ideal for measuring temperature of "thin masses" of food such as meat patties, Chicken and fish fillets per FDA Food Code 4-302.12 (B)
- Can be field calibrated
- Sealed unibody construction and RoHS-compliant
- IP56 waterproof & grease resistant

ThermoTrace Infrared Thermometer



- Lightweight, sleek and compact
- Instant non-contact surface temperature measurement
- Useful with moving objects or for hard to reach places
- Highly accurate when compared to competitive models

Pen Type Thermo-Hygrometer Digital Thermometer

- Hold Button
- °C/°F selectable
- Pocket clip attached to back side
- Improved sensor design for faster response
- Min/Max memory for temperature & humidity - lowest and highest readings stored for instant recall
- Useful for checking temperature and humidity readings in greenhouses, broiler houses, hatcheries, clean rooms, drying rooms, and for HVAC/R applications



Shipping and Handling Indicators

Dry Pak Industries is a leading provider of Shockwatch & TiltWatch shipping and handling indicators. These Irreversible indicators are designed to alert customers when their valuable cargo has been mis-handled while in-transit or storage. A Shockwatch label should be placed on the outside of each carton, crate or pallet that contains impact vulnerable goods. The Shockwatch indicator labels provide an easy, cost-effective method to monitor shock and vibration inside your packaging while shipping anywhere in the world. Shockwatch labels and clips are available in multiple sensitivities ranging from 5 to 100 G-forces. The indicators are designed to display an irreversible color change when an omni-directional impact occurs to a shipment that has been mis-handled. In addition, these indicators serve as a warning notice to the trucking or courier company that this shipment must be handled with care. Many Dry Pak customers experience a dramatic reduction in shipping and handling damage shortly after implementing Shockwatch indicators into their shipping and packaging protocols.

The Shockwatch and Tiltwatch shipping and handling indicators can apply to almost any product shipping situation including: semiconductor devices, aerospace and military equipment, automotive components, glass products, commercial appliances, machinery, lab equipment, storage media, electronics, and furniture.

Product Benefits:

- Reduce product damage and loss incurred during transportation
- Protect fragile, sensitive or calibrated goods while in-transit
- Alert carriers that careful handling is mandatory - visual deterrent
- Provide evidence that mis-handling occurred
- Customer inspection time is reduced
- Reduce time spent processing damage product claims with shipping companies and customers
- Enhance image with customer, restores faith in your ability to delivery product safely
- Tamper-proof
- Easy-to-use adhesive backing requires no tools or assembly to install



ShockWatch Impact Indicators

Dry Pak's ShockWatch Impact Indicators help prevent damage to fragile, sensitive, perishable, or calibrated goods without surrendering control of their handling. Prevent mishandling every step of the way with Dry Pak's ShockWatch Impact Indicators. When placed directly on your goods or packaging, Dry Pak's shock sensors detect and record impact and mishandling of all goods while in-transit. These cost effective, attention-getting devices act as a strong visual deterrent to unacceptable handling, no matter what you're shipping.

ShockWatch Tilt Indicators

ShockWatch Tilt Indicators detect and record unacceptable tilting on goods that must remain upright. Removal of the adhesive backing activates the devices. Once applied to the shipping container, the product cannot be tipped without indisputable evidence of mishandling. The TiltWatch and the TiltWatch Plus are reliable and economical solutions to prevent damage to goods in transit.



TiltWatch: This indicator turns red if the product it is affixed to is tilted or completely upended – but remains unaffected by movement due to normal handling conditions and aircraft take-offs.

TiltWatch Plus: This indicator provides 360° monitoring – indicating the exact angle of tilt or whether complete overturn occurred.



Impact and Environmental Recorders

ShockWatch Impact and Environmental Recorders provide ongoing monitoring of the intensity and duration of shock and vibration to large stationary or moving equipment, structures, and storage environments. Tri-axial piezo-electric accelerometer technology is used to record impact direction, amplitude, and duration. Onboard sensors also record changes in temperature, humidity, and atmospheric pressure.

ShockLog: This device records the date and time of up to 400 events. Optional accessories include an environmental indicator, and a remote accelerometer to record shock and vibration in areas away from where the device is mounted.

Micro ShockLog: This device records the date and time of up to 128 events, in addition to peak values of impacts at user-specified intervals. Optional accessories include a humidity sensor.

ShockWatch Companion Label & Tape Program

A key element in the success of ShockWatch Impact Indicators is the companion tools available. Used in conjunction with the indicator labels, these tools include alert stickers, caution tape, posters, and supporting documentation. The complete product offering constitutes a highly effective damage reduction and prevention program. Implementation of this damage prevention program provides psychological reinforcement of proper handling procedures and changes the behavior of material handlers. It provides a highly visible deterrent to mishandling throughout the supply chain.





Dry Pak Industries, Inc.

Quality and Service Guarantee

Commitment to Service

The entire DPI organization is committed to provide our customers with the highest level of service and shortest lead-times in the packaging industry. DPI has inventory positioned strategically throughout the US, Asia and Latin America, which gives us the ability to quickly and easily ship product anywhere in the world. DPI provides its customers with inventory stocking programs as well as drop ship services to any location worldwide.

Commitment to Quality

DPI understands that its customers expect the highest quality products at affordable prices. DPI has contracts in place with some of the packaging industry's most valued suppliers. Thus enabling DPI to pass along these savings and quality directly to the customer.

DPI Advantages:

- Superior product knowledge and training available to customers
- Shortest lead times in the packaging industry
- Multiple US and International warehouses
- Affordable pricing structure for all order sizes
- Fully stocked warehouse
- Open 7 days a week via phone, fax, and email
- Drop ship and JIT inventory programs available



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