Industrial Safety & Hygiene News
ISHN
IGA
INTERNATIONAL GLOVE ASSOCIATION

helping HAND

February 2012

Protecting your HANDS

A new **fit and feel**

Embrace the assets of seamless coated knit gloves

By AARON COFER

Hand protection continually evolves and improves to meet the needs of a wide array of industries. Now, more than ever, employers have a responsibility to provide their employees with not only the safest and most efficient hand protection, but they also must choose the glove that will increase productivity throughout the workplace.

The new alternative

Seamless coated knit gloves are extremely versatile and have revolutionized the fit and feel of hand protection. Knitted from various base materials such as cotton, synthetic yarns (polyester and nylon), and high performance yarns (Kevlar® and Dyneema®), seamless coated gloves are less labor intensive to produce. Use of various synthetic coatings such as latex, nitrile, foam nitrile, and polyurethane can also enhance grip characteristics and provide improved durability and wear life.

Dexterity and ergonomics are crucial in making a glove choice. Gloves that are tight may restrict movement and can increase stress to the hands. Gloves that are too bulky will cause workers to exert more force in handling objects, which can result in unnecessary strain.

A seamless coated knit glove offers comfort — allowing hands to breathe — and conforms to the hand for a better fit, hence the saying "it fits like a glove." Seamless coated gloves also provide workers with enhanced grip and durability. Some thinner 13- and 15-gauge styles can also provide workers with enhanced sense of touch and the ability to handle smaller objects such as nuts, bolts or electronic components.

These knitted alternatives have a better fit and provide greater functionality than leather. With these gloves, workers are able to perform meticulous tasks while improving safety, increasing productivity and providing long-term cost savings to the employer by reducing claims for hand injuries that are often preventable.

Assessment of cut resistance

More and more attention is being given to cut protection, as it is represents one of the leading incidents for hand injuries. Cut resistance is a function of a glove's material composition and weight. Cut protection can be influenced by the strength, hardness (dulling effect), lubricity (slickness) and/or roll of the yarns used in glove construction. Use of high-performance materials such as Kevlar® or Dyneema® are being incorporated into glove specifications as a means of improving cut resistance.

Both materials provide a clear performance advantage, offering five to ten times more cut resistance than leather and are 15 times stronger than steel on a weight-for-weight basis. These materials are often blended or engineered with stainless steel or fiberglass fibers for vastly improved cut protection levels and are often available with various coatings. Durability and cut-resistance must be taken into account as critical factors when choosing a workplace glove.

When selecting a cut-resistant glove, it is helpful to compare data on cut levels. Globally, there are two different performance standards for cut resistance: the European Standard EN388 and the American National Standard ASTM1790-05. Cut-level results for these two standards are based on different testing methods and therefore cannot be correlated. When referring to a cut level, know which standard is being referenced in order to set the right expectations for performance and specifications. Most cut-resistant gloves are tested scrupulously under both standards.

Photo courtesy of Ansell

Inherent cost-savings

Price, of course, also plays a role in glove choice. It isn't hard to see that seamless coated knit gloves produce a substantial long-term savings over leather. Labor costs are greatly reduced in the production of seamless knitted styles, reducing one key variable in the final cost structure. Seamless coated knit gloves can last twice as long as cotton and remarkably, three times as long as leather. The impact of preventable injury on employee productivity, as well as corporate health insurance costs, is substantial. Each disabling hand injury can cost as much as $26,000. Additionally, OSHA reports that hand injuries are the second leading cause of preventable work-related injury.

Evolution of gloves

Leather was, for many years, considered to be the standard form of hand protection used for medium to heavy-duty jobs. Leather gloves afford good mechanical properties for abrasion and puncture resistance. But as the years have passed, we have been taught that leather possesses qualities similar to human skin — meaning that leather gloves do not provide wearers with the best form of cut protection.

Poor-fitting hand protection can negatively impact productivity and efficiency rates of workers by inhibiting wearers from working to their greatest potential. This often results in lost revenue and lapsed delivery of results. Poor fit or uncomfortable gloves have also been noted by workers as reasons gloves are removed to complete a task, which ultimately leads to greater risk for hand injuries. Proper fit, enhanced dexterity and tactile sensitivity make seamless knit gloves more comfortable and functional reducing fatigue and chances of workers removing their gloves to perform a task. ISHN

Aaron Cofer is a safety products manager for Airgas, Inc. He can be reached at (215) 826-0200 x1 4037 or aaron.cofer@airgas.com. Airgas, Inc. (www. airgas.com), through its subsidiaries, is the largest U.S. distributor of industrial, medical, and specialty gases, and hardgoods, such as welding equipment and supplies and is one of the largest U.S. distributors of safety products.

S-TEX® 303
Kevlar® Hagane Coil™ w/Natural Rubber Palm-Coating
ANSI CUT LEVEL 5

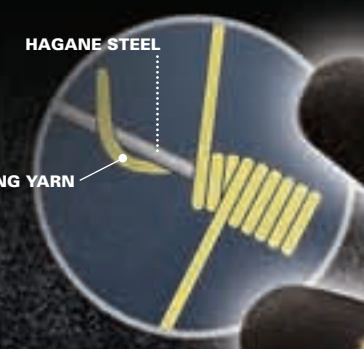
S-TEX® 300
Hi Viz Hagane Coil™ w/Natural Rubber Palm-Coating
ANSI CUT LEVEL 4

S-TEX® 350
Hi Viz Hagane Coil™ w/Nitrile Palm-Coating
ANSI CUT LEVEL 4

S-TEX®

WITH PATENTED HAGANE COIL™ TECHNOLOGY

HAGANE STEEL IS THE HIGH CARBON STEEL USED IN FORGING SAMURAI FIGHTING SWORDS.



Showa's patented Hagane Coil™ technology encases the stainless steel wire. The patented coil allows it to move just enough when flexing the hand so it will outlast the competition 3X longer without irritating the wearers hand!

SHOWA® BEST® GLOVE

MANUFACTURERS OF N-DEX® AND ATLAS® HAND PROTECTION

SHOWA BEST GLOVE - PREMIUM HAND PROTECTION FOR EVERY APPLICATION. Showa's research and development raises the bar in hand protection innovations yet again! Introducing the new S-TEX® series of cut resistant hand protection. Utilizing the patented Hagane Coil™ technology we are able to provide high levels of cut resistance without sacrificing performance and comfort. Hagane steel is the high carbon steel used in forging Samurai fighting swords. In addition it utilizes a unique coiling technique that twists an attending yarn loosely around the stainless steel core. Thus protecting the stainless steel core when the hand bends and flexes for maximum protection and comfort. Please contact your Showa Best sales professional or our customer service for more information.

Email: USA@showabestglove.com | Customer Service: 800.241.0323 | www.showabestglove.com

Kevlar® is registered trademark of E.I. DuPont de Nemours and Company.

CIRCLE 135 *FOR **FREE** INFO*

Retesting rubber insulating gl

In-service testing ensures safety & saves money

By RICHARD A. RIVKIN

Over the last several months there have been many articles written about NFPA 70E, the "arc flash standard" and the changes in the 2012 edition. However, one topic that is often not discussed in detail is the need for rubber insulating gloves where a shock hazard exists from exposure to energized equipment.

Rubber insulating gloves

Maximum use voltage is the one that should be of concern to most users, but it is important to take note of the proof-test voltage as well (see chart). All rubber insulating gloves are tested by the manufacturer at the specified proof-test voltage. Manufacturers also perform a dielectric breakdown test at an even higher voltage, in addition to other tests, to validate the dielectric strength of the rubber material. The result is a significant margin of safety between the test voltage and the maximum use voltage. Your hazard assessment will help you determine which class of gloves is appropriate for your application.

Rubber insulating gloves are offere

Class	Proof-Test Volta
00	2,500
0	5,000
1	10,000
2	20,000
3	30,000
4	40,000

Don't forget that, with few exceptions, rubber insulating gloves must always be worn with leather protector gloves manufactured in compliance with ASTM standard specification F696. Be aware that there are leather gloves in the market purporting to be rubber insulating glove leather protectors but they do not meet the strict requirements and specifications of ASTM F696. The standard is very specific with regards to the acceptable types of leather (and their thickness), the permissible types of thread stitching, and many other details. Be sure to verify that the leather protectors you are using meet ASTM F696.

One issue often overlooked with regards to rubber insulating gloves in an industrial environment is the retesting of gloves. Rubber insulating gloves are not like safety glasses where you can keep using them until they break. Periodic retesting of rubber insulating gloves should also be performed at the proof-test voltage to ensure that they are still safe. So while some companies may decide to simply throw them away and buy new ones, this is a waste of money considering the gloves can be retested and recertified by a qualified test lab for a fraction of the cost of a new pair.

It is with this in mind that we offer the following FAQ about the in-service testing process for rubber insulating products:

What are the applicable OSHA regulations concerning in-service testing of rubber insulating products?

29CFR1910.137 (b) covers in-service care and use of electrical protective equipment, specifically insulating blankets, covers, line hose, gloves and sleeves made of rubber, and it specifically references the relevant ASTM specifications.

What ASTM specifications apply to the in-service care of rubber insulating gloves?

ASTM F496

What are the testing intervals for electrical protective rubber insulating products?

The interval between date of issue and tests should be based on work practices and test experience. For gloves the interval shall not exceed 6 months except for industries, such as telecommunications, that utilize insulating gloves as precautionary protection, in which case the maximum interval may be increased to 9 months.

What about retesting unused rubber insulating products?

All electrical protective rubber insulating products are tested by the manufacturer prior to first shipment. End users (or end users' designee) may perform acceptance testing within the first 2

loves

ed in 6 different classes, based on ASTM D-120.	
ge (AC)	Maximum Use Voltage (AC)
	500
	1,000
	7,500
	17,000
	26,500
	36,000

Photo courtesy of Salisbury by Honeywell

months after receipt. Rubber insulating products shall not be placed into service unless they have been tested electrically within the previous 12 months.

What is involved in the inspection and testing process?

According to ASTM specifications, at a minimum the inspection and testing of rubber insulating products includes check-in, removing previous testing marking, washing using cleaning agents that will not degrade the insulating properties, visual inspection of all surfaces (inside and out), electrical test, final inspection, recordkeeping, marking, and packing in appropriate containers for storage or shipment. "Appropriate containers" means boxes, or similar sturdy packaging materials to prevent folding, creasing, or similar loose storage that can cause stress on the rubber.

Can rubber insulating products be repaired?

While some test labs do perform repairs, it is the opinion of the author and our company that repairing or trimming defective rubber insulating products is not good practice and we will not perform such repairs.

Who is qualified to perform in-service inspection and testing of rubber insulating products?

Many electric power utilities operate their own dielectric test facility to perform acceptance and in-service testing of rubber insulating products. There are also independent testing facilities that can perform the acceptance and in-service testing on behalf of end users.

What is "NAIL" and what does it mean to be a NAIL-Accredited Test Lab?

NAIL (or formally NAILforPET,) formed in 1978, stands for National Association of Independent Laboratories for Protective Equipment Testing. It incorporates the only Laboratory Accreditation for electrical equipment test labs program in North America. Accreditation criteria include laboratory facility, equipment, training and knowledge of staff, and quality control work procedures covering the inspection and testing of electrical protective equipment in accordance with ASTM specifications. Today the NAIL program is recognized throughout North America as an important asset to the credentials of a testing facility.

Two-set program

One recommended procedure to ensure that test gloves are always available is to implement a two-set program. For example, set A is used for six months. Then set B is put into service and set A is sent to a test lab for retest. A similar rotation is done six months later. Test labs usually mark the gloves with a date of test and/or a date to return for test to provide a visual reminder of when gloves need to be retested. To make the program even easier, some companies implement a color-coded glove program. For example, red gloves in the first half of the year and black gloves the second half. This way if a worker is using red gloves in October, a safety director or supervisor can quickly see that the worker is using out-of-date gloves and react accordingly.

Improper use of rubber insulating gloves can be a matter of life and death. Get them retested regularly to make sure that they are still electrically safe. Treat your rubber gloves well and they can last a long time. ISHN

Richard A. Rivkin is president and CEO of Saf-T-Gard International, Inc., a 75-year old safety products distributor and manufacturer. Saf-T-Gard operates the NAIL-accredited Voltgard Test Lab.

Dispense
Reclaim
Clean
Reuse

SAFETY

SUSTAINABILITY

SAVINGS

Safety and Inventory Management in an Environmentally Sound Process

Banom

SAFETY

As a manufacturer of cut-resistant gloves and sleeves for the sheet metal, glass, paper, and food industries, Banom® has a proven track record of reducing lacerations and total spend.

Controlling glove costs starts with a quality product that lasts long enough for product usage to be controlled.

Banom products are made with HTF (High Tenacity Filament)® yarns which provide cut resistance, high tensile strength, and abrasion resistance for a wide variety of applications. Combining these three physical characteristics yields safer products that last longer and can be repeatedly cleaned and reused without loss of protective qualities.

SAVINGS

What makes *Trackpro*™ unique? First and foremost, it operates independently of your IT system. Totally wireless, *Trackpro*™ dispensing centers can be located anywhere a 110 volt outlet is available.

Workers can use an ID or Prox card to requisition product.

Companies can record usage, limit amount dispensed per person, or restrict items available based on the application in which they are to be used.

Usage reports can be custom designed to reflect what, when, and how often an individual requisitioned a product.

A Bantex® reclamation center can be connected to the *Trackpro*™ machine to collect dirty gloves and sleeves for cleaning.

SUSTAINABILITY

Bantex® reconditioning is a cleaning process that maintains product safety and integrity, returning product for reuse that is bacteria free and cosmetically acceptable to wear.

This process utilizes multiple cleaning stages that safely remove contaminants with environmentally friendly detergents. The final product is pH balanced to ensure that there will be no skin irritation by the user. All gloves are metal detected for both ferrous and non-ferrous metals in order to eliminate metal slivers.

Cleaning gloves and sleeves allows companies to provide better products that are safer and more durable. Unit cost is reduced with each cycle of cleaning and reuse. Keeping these products in the system helps eliminate the amount of waste that is sent to the landfill.

CIRCLE 91 *for **free** info*

Multi-step Process

100% Inspected & Sorted
Paired by Style & Size

Metal Detected

When workers **won't wear gloves**

Assess your needs, educate & end excuses

By GIL LEVERNE, Jr.

Glove wearing is one of the most effective industrial injury prevention programs. Statistically, wearing gloves reduces the relative risk of hand injury by 60 percent — and yet, getting employees to consistently wear gloves is one of the most daunting challenges for safety officers.

Workers raise all type of objections, from the age-old "I can do a better job without gloves" to "Gloves get in the way of good grip" or "Wearing gloves makes my hands sweaty and slippery." Statements such as "Cut-resistant sleeves are awkward" can also be commonplace. In the field, we see instances where workers have modified gloves by removing the fingers, wrapped their hands with tape or bandaging leaving their fingers free or set their gloves aside entirely. All of these actions, although taken to improve job performance, put the workers' hands at risk.

Safety officers are challenged to both understand worker concerns and enforce best personal protection equipment (PPE) practices. Fortunately with the many task-specific glove models available today, most objections to glove wearing can be overcome through an assessment that matches workplace glove needs with the appropriate hand protection product. In many cases, employees who rebel against glove wearing are being required to wear a glove that is not best suited for the work they are doing.

It is always a good idea for the person in charge of PPE to put himself or herself into the "gloves" of the employee to better understand objections to the status quo glove situation and make better informed purchasing decisions. The last thing an employer wants is employees who feel uncomfortable or hindered by an inappropriate glove.

Photo courtesy of Showa Best Glove

OSHA on Gloves

OSHA puts appropriate glove selection squarely in the court of the employer with two regulations:

1910.138(a): General requirements. Employers shall select and require employees to use appropriate hand protection when employees' hands are exposed to hazards such as those from skin absorption of harmful substances; severe cuts or lacerations; severe abrasions; punctures; chemical burns; thermal burns; and harmful temperature extremes.

1910.138(b): Selection. Employers shall base the selection of the appropriate hand protection on an evaluation of the performance characteristics of the hand protection relative to the task(s) to be performed, conditions present, duration of use, and the hazards and potential hazards identified.

To meet both the demands of compliance and worker comfort, along with an overall PPE glove assessment (usually provided by a representative of a glove manufacturing firm), safety officers should address the following:

- Glove and sleeve fit
- Dexterity vs. safety
- Grip
- Hand and arm comfort

Fit comes first

Fit is key to worker comfort — both in gloves and sleeves. Employers must not only find gloves with desired performance properties but also determine which glove size is right for the individual. To determine proper fit, measure the circumference of the hand around the palm or at the base of the metacarpals. The number of inches will help determine the correct size:

< 7 inches = Extra Small

7.5 inches = Small

continued on page 32

FASTFIT®
BLACK

ORIGINAL™
BLACK

M-PACT®
BLACK

M-PACT® 2
BLACK

M-PACT® 3
BLACK

FASTFIT®
HI-VIZ

ORIGINAL™
HI-VIZ

M-PACT®
HI-VIZ

M-PACT® 2
HI-VIZ

ORHD
HI-VIZ

We've got you covered.

MECHANIX WEAR
mechanix.com

CG4X
UTILITY

CG4X
PADDED PALM

CG4X
FRAMER

CG4X
IMPACT PRO

CG4X
IMPACT PRO

CG
UTILITY

CG
PADDED PALM

CG
FRAMER

CG
IMPACT PRO

CG
HEAVY DUTY

Workplace hazards exist everywhere and in every form. For over 20 years, Mechanix Wear has built its reputation on creating durable hand protection for a variety of tasks and conditions. Our gloves help you work faster, safer and cleaner—all while giving you more power and control. They're the perfect tool to get the job done right, every time. Mechanix Gloves. The Tool That Fits Like a Glove.® US: 800.222.4296 Canada: 604.542.7055

CIRCLE 21 *FOR **FREE** INFO*

When workers **won't wear gloves**

continued from page 30

8 inches = Medium
9 inches = Large
10 inches = Extra Large
> 10.5 inches = Extra Extra Large

Similarly, workers' arms should be measured to find the proper sleeve length when cut-resistant sleeves are required on the job.

Dexterity vs. safety

Today glove manufacturers are producing gloves — even cut-resistant gloves — that provide more and more dexterity. With the evolution of the engineered yarn, manufacturers are engineering cut-resistant gloves to be thinner and thinner while achieving higher and higher cut-resistance ratings. Cut-resistant fibers are also being combined with polyester fibers to achieve a softer feel. In many cases, a core fiber is wrapped with a softer-touch fiber for a cool, soft-feel, ergonomic design. Today's engineered fibers work in concert with the mid-nineties introduction of seamless glove knitting technology to take cut-resistant glove comfort to new highs.

Get grip

Grip, particularly oily or wet grip, has been a key target of glove manufacturer research over the past decade. The result is that there are literally dozens of glove models designed specifically to provide grip under any number of circumstances. Many of these gloves have a sponge nitrile coating that is modified to provide specific grip qualities. For example, some coatings provide maximum grip while others are engineered with a grip and release characteristic. Workers concerns about grip should be allayed with proper glove selection from one of these newer products.

No more hot hands

Employees who point out that their hands feel hot may need a different glove model than the one they are currently wearing. Today many gloves are manufactured with ventilation holes to address this issue. In addition, the liner fabric of the glove can make a huge difference in worker comfort. For example, gloves with a cotton liner base are generally cooler to wear than those built on a synthetic fiber base. The widespread use of palm or ¾ dipping of gloves that are coated also results in gloves that are cooler to wear as contrasted with fully coated models.

Listen to your employees

Making employees comfortable with their hand protection requires listening to their concerns and showing them solutions that work. Employees who multi-task may need multiple forms of hand protection. Often, double- or triple-glove wearing is appropriate for workers who need heavy protection for some tasks and less protection for others. One example would be a worker who needs the lightweight protection of a disposable glove for most tasks but needs the option of wearing a heavy-duty chemical resistant glove or cut-resistant glove over the disposable glove for other tasks.

Throughout it all, education is key. If glove wearing is mandatory all of the time, education is simple. However, if glove wearing is not required for some tasks, employees need to know what those tasks are. Give them details of exemptions from glove wearing.

Some employers use incentives for groups of workers who go through a specified period of time with no glove wearing rule infractions. This helps get employees working together to achieve the prize. It also increases glove-wearing awareness and opens the door for workers to urge one another to follow the rules.

In the end, the goal is to keep workers safe, happy and productive with the right hand protection. The answers are there; all it takes is a solid assessment of both PPE needs and employee concerns. ISHN

Gil LeVerne, marketing communications expert, has been in the hand protection industry for more than a decade. At Showa Best Glove (www.showabestglove.com), he has responsibility for corporate marketing and communications. In this capacity he works with national accounts, end users and vendors to develop national advertising strategies, trade show presentations, catalogs, and other literature to support the company's marketing efforts.

Do you

TAEKI®?

TAEKI5
Beyond Expectation
The Ultimate Total Hand Protection

Glove Style 52#Jungle

Special Military Taeki5
High Mechanical & Impact Protection

Composition

- *100% TAEKI5® fiber*
- *PU Antigrip coating*
- *Size 6' to 11'*
- *Custom Finish available*

Properties

- *High Dexterity*
- *High Abrasion resistance*
- *High Cut resistance*
- *UV resistance. Keep properties & color in contact with light*
- *Lint free*
- *Washable*
- *Sanitized® treated*

Typical Application

- *Military*
- *Police Force*
- *Outdoor hunting*
- *Industrial (different Finish/shapes)*

EN388

4,5,4,2

CIRCLE 103 *for **free** info*

QS Safety
Protect your life

Room 1801, Shanghai International Trade Centre, 2201 Yan An Xi Road, Shanghai 200336, CHINA
Tel: +86 21 6278 9090 Fax: +86 21 6278 9696 Http://www.qsglove.com E-mail: sales@qsglove.com

Yes, we
Do!

Chemical contact

How do you pick the right protection?

By ERIC REUSCHER

OSHA's personal protective equipment standard for general industry, 29 CFR910.132-1910.138, governs the requirements for an employer to provide chemical protective gloves to an employee. This rule makes it mandatory for the employer to assess the specific task and ensure that the proper glove is provided to the employee for the task being done. An employer must perform a hazard assessment of each job task and determine the proper Personal Protective Equipment (PPE) that should be used during the execution of that task. In this article, we will be looking at chemical protective gloves, when they should be used, how to choose the proper glove and some basic characteristics of the most common chemical protective glove materials.

Photos courtesy of Lab Safety Supply

When should chemical protective gloves be used?

The answer to this question starts at the evaluation of the specific task that has to be performed. Any task that requires the worker to come in contact with a chemical should require the use of the proper chemical protective gloves, in addition to all other necessary PPE. Note that if the exposure hazard to a chemical can be engineered or administrated out of the task, do this before the use of PPE is considered. PPE is the last resort for protection from the hazard.

How do you choose the right glove?

Once it is determined that chemical protective gloves are necessary for the task, you should look at several chemical and task characteristics:

- splash or immersion
- chemical being handled
- temperature/concentration of the chemical
- length of time the employee will be exposed to the chemical
- dexterity needed for the task
- disposable or reusable glove choice

The Material Safety Data Sheet (MSDS) is a good place to start for information on the chemicals to which the employee will be exposed. Within the MSDS, there is a section that will specify the PPE to be used while handling the chemical. This is where the type of glove or acceptable glove materials are listed that may be used with the chemical per the manufacturer of the chemical or product. If the MSDS is vague, then a call to the manufacturer is in order to determine what glove materials you should select when handling this chemical. Chemical concentration is very important criteria needed when making a glove selection for hand protection from chemical attack. At higher concentrations, many chemical protective gloves do not offer adequate protection to the user.

Manufacturer's chemical compatibility tools are available to ensure that the glove chosen is compatible with the chemical and chemical concentration. It should be noted that most chemical compatibility tools will give information for pure chemicals, not mixtures. This issue highlights the need to use the MSDS to determine the specific glove that the manufacturer suggests. It is necessary to consider any additional hazards and the appropriate glove characteristics that are needed for protection during the task.

Different glove materials resist different chemicals; no one glove can be suited for all chemical exposures. By use of the manufacturer's guide, select a glove that is most resistant to the chemicals being used. Remember, the actual chemical compatibility of a given glove material can vary from manufacturer to manufacturer. Selections

should be based on the particular manufacturer's test data.

Learn the lingo

To read a chemical resistance guide, it is important to become familiar with the terminology used:

Breakthrough time: The elapsed time between initial contact of the chemical on the glove surface and the analytical detection on the inside of the glove. Typically a test run is done for a specific challenge time in minutes and then stopped upon detection. When maximum test time is reached and no breakthrough is detected, it is common to see this expressed using the greater than symbol (>) and the number of minutes the challenge test exceeded. This also may be expressed as "ND" for none detected.

Degradation: A change in one or more of the physical properties of a glove due to contact with a chemical. This can appear as a swelling, softening, shrinkage or cracking of the material. For example, a rating of "E" represents excellent, a rating of "G" represents good and so on. This information usually is found in the "key" included with the compatibility guide. A rating of excellent indicates the glove had little or no signs of degradation when exposed to the challenge chemical. **Note, a good degradation rating does not guarantee an acceptable breakthrough time.

Permeation rate: The rate at which a chemical passes through a glove material. This process involves absorption on the glove surface, the diffusion of the chemical through the material, and the desorption on the glove's inside surface. This is a complex measurement: µg/cm2/MIN (micrograms per square centimeter per minute). This measurement is also limited to the "LDL" or Lower Detection Limit of the equipment used.

Mixtures of chemicals require some consideration. Most manufacturers only test glove materials to individual chemicals and not to mixtures. In these cases a call to the manufacturer of the gloves may be in order to determine if a glove could be used in that mixture and application. If this information is not available from the manufacturer, then select a glove on the basis of the chemical component with the shortest breakthrough time, since it is possible for solvents to carry active ingredients through polymeric materials. When chemical mixtures are in the equation, the end user should proceed with caution or consider testing the agent with the glove they have selected.

What are the most common chemical protective glove materials?

Butyl: A synthetic rubber material that offers the highest permeation resistance to gas and water vapors. Especially suited for use with esters and ketones.

Neoprene: A synthetic rubber material that provides excellent tensile strength and heat resistance. Neoprene is compatible with some acids and caustics. It has moderate abrasion resistance.

Nitrile: A synthetic rubber material that offers chemical and abrasion resistance — a very good general-duty glove. Nitrile also provides protection from oils, greases, petroleum products and some acids and caustics.

PVC (polyvinyl chloride): A synthetic thermoplastic polymer that provides excellent resistance to most acids, fats and petroleum hydrocarbons. Good abrasion resistance.

PVA™ (polyvinyl alcohol): A water-soluble synthetic material that is highly impermeable to gases. Excellent chemical resistance to aromatic and chlorinated solvents. This glove cannot be used in water or water-based solutions.

Viton®: A fluoroelastomer material that provides exceptional chemical resistance to chlorinated and aromatic solvents. Viton is very flexible, but has minimal resistance to cuts and abrasions.

SilverShield®/4H: A lightweight, flexible laminated material that resists permeation from a wide range of toxic and hazardous chemicals. It offers the highest level of overall chemical resistance, but has virtually no cut resistance.

In many cases, the chemical protective glove is the first piece of PPE that a person considers donning before they start a task. It does not take long to perform a hazard assessment or to collect the MSDS sheets for the chemicals being used. This will go a long way toward protecting the employee and keeping your OSHA 300 log clean. ISHN

Eric Reuscher attended Illinois State University where he received a BS in Science (Biology) and a BS in Environmental Health. He spent seven years as an environmental consultant in and around Chicago and as an emergency response technician for Region 5 of the EPA. Over the past six years, he has been a sales lead and technical product support specialist for the safety product line of Lab Safety and W.W. Grainger. He has received accreditations for Asbestos and Lead Building Inspector, 40 hour HAZWOPER, and OSHA 30-hour General Industry Safety and Health. He can be reached at Eric.Reuscher@grainger.com.

High-performance **cut protection**

R&D produces lighter, less costly gloves

By MATT PIOTROWSKI

Flash back 15 years ago — the year is 1997 — Bill Clinton is starting his second term in office, the Toyota Prius is unveiled for the first time, and we all watched in disbelief as the tragedy of Princess Diana unfolded. Since that time, there have been two different U.S. presidents in office, the hybrid car is now a household term, and a new beauty has been welcomed to the royal family.

Change is inevitable.

Sometimes it is slow evolution and other times it is lightning fast transition. This holds as much truth in the cut-resistant hand protection industry as it does in everyday events. In our industry, change can be slow or fast, but one thing is for sure — change is here to stay.

Flash back again to 1997. Cut protection for your hands is dominated globally by a single fiber. Para-aramid is at the top of the cut resistance food chain and is an industry favorite. This wondrous yellow fiber single-handedly changed the industrial glove market forever and set in motion a tidal wave of reform in how we protect our workers most valuable assets. No longer was the glove just four fingers and a thumb. It was now truly a vital part of on-the-job safety.

Fifteen years later, para-aramid continues to be an industry leader and end user favorite. However, much like the effect the hybrid car had on the automobile industry, people began to take notice of the alternatives. End users became more educated, more informed and more cognizant of the fact that reducing hand injuries saves money. Yarn and glove manufacturers in turn responded by trying new ideas, new formulas and new technologies — all in the quest to supply what every customer wants — better protection at a lower cost.

Innovative ideas

Ingenuity and innovation have allowed us to benefit from this new wave of technology. What once was only available in open end yarn or basic ring spun design can now be produced in dozens of configurations with multiple fibers or filaments, in any number of yarn constructions. New high performance fibers have paved the way for more application-specific hand protection solutions. Polyethylene, ballistics grade nylons, high performance synthetics and even improved para-aramids have changed the way we look at the cut-resistant glove today.

The advent of implementing fiberglass and stainless steel into yarn construction has allowed the average cut-resistant glove to not only be lighter and less costly, but also more protective and more comfortable. Customers with smaller budgets for safety and hand protection are now able to provide innovative solutions for their workers, without having to break the bank. Cut protection, in varying levels, can now be extremely affordable and maintainable.

Fiber manufacturers and suppliers continue to churn out new ideas and products that can enhance a glove in just about any safety category. No longer is a glove that protects its wearer from cut and slash injuries only yellow in color. As the awareness and importance of workplace safety continue to grow, customers are always hunting for that double whammy — reduced recordable injuries and reduced costs. Many end users feel they can now reach that once unobtainable goal.

What once was an industry with only a handful of selections to choose from has now exploded into a virtual "grocery store" of selections. Seamless knit, cut and sew, flat dipped, sewn on, reinforced, fully lined, etc. — can all be provided now in very application-specific designs or in broad, one-glove-fits-all configurations.

The introduction of industry-accepted cut resistance testing and qualification has also aided in the growth of new fibers and technologies by supporting claims of superior cut results with scientific facts. Many apparatuses are available for use to demonstrate or qualify a product's cut resistance level and more and more people at the end user level are beginning to demand and rely on testing and certification as benchmarks for their applications. Throwing a glove onto your desk and dragging a box cutter across it is no longer an acceptable measure of protection level. Customers want solutions that actually work, and that can be cost-effective, and they want proof to back up their claims.

Photo courtesy of Worldwide Protective Products

Several groups, such as the International Glove Association, continue to advocate for increased awareness and updates to current industry-accepted ratings. This will prove to be paramount in supporting the continual growth of innovative and unique products.

The ultimate glove

Awareness within the industry continues to grow as everyone scrambles to make the "ultimate glove." Though a glove that can work in every single application will likely never exist, think of the incredible new designs manufacturers will think of trying to get there. ISHN

Matt Piotrowski is in Research and Development at Worldwide Protective Products and is based in the company's Buffalo, NY, facility. He can be reached at (877) 678-4568, mpiotrowski@wwprotective.com, wwprotective.com.

WEST CHESTER

R2

THE ORIGINAL RUGGED RIGGER.

West Chester set the precedence in hand protection for the oil and gas industry with the original Rugged Rigger glove. Through ongoing innovation, R2 gloves have contributed to significant hand injury prevention.

FROM THE FIRE HAZARDS OF REFINERY WORK TO THE CUT RISK OF SUPPORTING DUTIES, WE CONTINUE TO PROTECT WORKERS UP AND DOWN THE PIPELINE.

R2
86712
ASTM F1790 Cut Level 1
EN 388: 4121

R2 Fire Resistant
86716
ASTM F1930: Zero predicted burn injury

R2 Cut
86715
ASTM F1790 Cut Level 3
EN 388: 4342

R2 Flex
713SNTPRG
EN388: 4344

CIRCLE 14 *FOR FREE INFO*

Visit us online @ www.west-chester.net

Don't overestimate glove perfor

Simple steps reduce risks, injuries & costs

By TIM PAREE

When injuries and accidents happen, they are often analyzed and talked about for days or even weeks. Yet precious little time is given to discussing near misses — the occasions when injuries almost occur. Because there is no recordable injury, workers typically continue to perform tasks as always — the same way and with the same hand protection products — until someone suffers a painful and costly injury.

This scenario is too common as safety personnel and workers overestimate their hand protection's performance capabilities, or underestimate the degree of risk. Sometimes workers and safety personnel are unaware of the extent of the hazards involved.

Photos courtesy of Ansell Protective Products

Problems associated with overestimating gloves' protective abilities include increased injuries and medical indemnity costs, reduced productivity, lower worker morale and higher worker turnover. Over time, managers will likely notice an increase in glove consumption as workers double glove in an effort to keep their hands safe. Workers are also more likely to discard hand protection products prematurely as they perceive injuries and near misses as a result of worn gloves.

Changing work environment

The question becomes why do companies overestimate the capabilities of their hand protection products — and what can they do to reduce injuries and the costs associated with this problem?

First, managers must recognize that changes in processes and technologies are inherent to every manufacturing facility. Second, they must consider specific factors that contribute to product overestimation. Adjustments, based on product performance, should reflect changes in workplace hazards as processes change in the factory.

Downsizing: Many companies are financially strapped these days and seeking ways to reduce costs, which often leads to a decrease in the number of workers. The increased workload may also create stress among workers, thus adding to the potential for injury.

If layoffs include safety managers, those remaining typically have more demands placed on them and find it impossible to be everywhere at once. Safety managers who once walked the plant floor and observed workers on the job are charged with larger areas and more employees. They often spend more time in their offices buried in paperwork and may be unaware a problem exists until they receive the injury report.

In some instances, human resource personnel are tasked with the role of safety director without the benefit of spending time on the plant floor and learning about the various processes. These individuals often rely on hand protection products selected by their predecessors without gaining feedback from workers as to whether the products

rmance

provide sufficient protection.

Product migration: Downsizing the workforce may result in workers assigned to new or different tasks. As workers move from one job to another, they often take their hand protection with them, even though the product may not provide the protection required. Unless workers are trained and understand when and where the gloves should be used, they may unknowingly place themselves at risk for injury.

Different processes and equipment: Plants that downsize or shut their doors often ship production and assembly equipment to other departments or locations. Workers at the new location may operate the equipment with the same hand protection they used for other jobs, which may fall short in its ability to keep them safe.

Eliminating product overestimation

Any company is vulnerable to overestimating the protective capabilities of its PPE. Below are steps to help eliminate this situation.

Benchmarking: Establishing benchmarks for all hand protection and other PPE will set a point of reference to measure future performance. Benchmarking should be part of a comprehensive assessment that reviews every application and invites workers to provide input about the benefits and challenges associated with their PPE. In some instances, workers may be more likely to confide issues and challenges to a stranger than to a coworker or manager.

Assessing applications and benchmarking will also help determine whether workers are employing best practices and using the latest technology. Worker observation and interviews at a food processing facility, for example, revealed individuals were wearing gloves made with Kevlar® for general purpose applications such as driving forklifts, taking product samples and light cleanup.

Workers were using leather driver's gloves for jobs that involved cut hazards, such as changing blades on packing line equipment and working with utility knives in warehousing applications. These practices resulted in many near misses and some injuries, with a number of workers indicating they lacked confidence in their ability to safely perform their jobs.

To correct the situation and establish best practices, the company partnered with a glove manufacturer to conduct an assessment and establish PPE benchmarks at its primary site and other locations to confirm every plant facility was compliant.

Implementing PPE recommendations: Companies that commit to a PPE assessment and benchmarking must be willing to make the changes necessary to improve worker safety. Recommendations will be based on observation, worker input and evaluation of the risk.

Management at the food processing company mentioned earlier was surprised to learn of the PPE application and immediately implemented the recommendations made by the glove manufacturer that conducted the assessment.

Recommendations included providing hand protection with Level 2 cut protection for applications such as preventative maintenance. Level 4 products were suggested for applications involving knives and blades, and a general purpose glove with greater dexterity was recommended for fork lift drivers, workers performing janitorial tasks and individuals removing bent plastic containers from filler machines.

Training and follow-up: Providing the appropriate hand protection for the application is not enough. Companies must educate workers about how and when to use the PPE and why changes were implemented. Any number of communication channels may be employed for training — glove boards, company intranet, newsletter, departmental meetings.

The food processor detailed above used glove boards and employee meetings to educate workers about the new products being implemented. Workers were receptive and willing to wear new hand protection products once they understood the advantages.

The facility also conducted a follow-up assessment to confirm individuals were still using the right gloves for the applications — even though the plant had already experienced a decline in near misses and injuries.

Reap the rewards

By setting benchmarks during the assessment, implementing recommended changes and providing workers the appropriate training, companies can significantly reduce near misses and injuries. They will likely reap other benefits, too, including greater worker confidence and productivity, reduced costs and lower employee turnover. ISHN

Tim Paree serves as national corporate accounts manager for Ansell Protective Products. He manages corporate customer projects coordinating comprehensive site assessments around Ansell's Guardian® cost savings and profit improvement platform. For more information about a comprehensive site assessment and how to reduce near misses and worker injuries, visit www.ansellpro.com or call (800) 800-0444.

2012 Glove Symposium heads southbound

International Glove Association will meet at Hammock Beach℠ Resort

March 25-27, Palm Coast, FL

Located near St. Augustine, this premier Florida family vacation beach destination features luxury villa and condominium accommodations overlooking the Atlantic Ocean, a 91,000 square-foot multi-level water park with lazy river, signature golf courses designed by golf's greatest legends, Jack Nicklaus and Tom Watson, a rejuvenating resort spa and a host of other recreational amenities that will make the IGA's stay a pleasureable one.

Resort restaurants and bars

Situated throughout Hammock Beach℠ Resort, each resort restaurant and bar is designed to complement its surroundings, from casual (bathing suit friendly) poolside cafe serving island-inspired fare to the warmth of a home-made Italian meal at Delfinos.

The Atlantic Grille offers a beautiful ocean-front setting for all-day refined dining. Whether you're looking for the right breakfast to start your day, a tasty sandwich to cap off a great morning round of golf or a delicious family dinner, the Atlantic Grille offers the two things that make resort restaurants special — great food and great atmosphere.

You want to spend your day at the water park, but at some point you'll need to eat. Hammock Beach℠ Resort has you covered at the Ocean Grille and Bar with a full-service kitchen and island-inspired bar so you can relax with a poolside cocktail or avoid that classic refrain, "Mom, Dad, I'm starving!"

As the day ends, the night begins at Loggerheads Lounge. Relax with a drink at the bar and enjoy an evening of entertainment. From a rousing game of pool on the billiards table to a live game on the big screen, Loggerheads is the perfect place to unwind.

Directions

The resort is about a one-hour drive south from the Jacksonville Airport, mostly a straight shot south on Interstate 95. Punch into your GPS the resort's address: 200 Ocean Crest Drive, Palm Coast, FL 32137-3258; (866) 841-0287.

Contact the IGA for registration, speaker and event info: (814) 328-5208

THE WINTERING PERIOD:

What does it mean for latex glove sales?

The wintering period may sound like the time of year that the snow birds, aka retirees from the northern United States, travel south for the winter months to escape the many inconveniences that snow can cause.

The context referred to here does not relate to snow at all, but to the coldest months in places where rubber is grown.

So what does the wintering period have to do with the price of latex gloves in the United States and the rest of the world?

The wintering period is an annual event that falls between February and May. During this period, which lasts approximately 4 to 6 weeks, the leaves of the rubber tree die and fall off, and new leaves are formed. Both the metabolism of the tree and latex production are substantially affected.

Accordingly, rubber production is normally low during the rainy season. During the wintering period, rubber production shrinks 45% to 60% from the peak.

These seasonal variations are important factors influencing the latex glove market. Latex glove distributors tend to restock inventories in anticipation of even higher latex prices during the wintering period. Typically, after the wintering period ends, there is a marked increase in the supply of latex.

There are, of course, many factors that affect supply and demand in the disposable latex glove market. Seasonality of the harvest, as mentioned above, is just one factor. Tsunamis, earthquakes, blight (notably the South American Leaf Blight), price speculation, pandemics, adverse weather/growing conditions, competition for farm land from other grains, etc. are exogenous factors that guide supply and demand and which ultimately determine disposable glove prices. The vast majority of natural rubber (NR) goes toward the production of tires, and tire manufacturers tend to get the raw materials before glove manufacturers as there is limited supply. Therefore, it is hard to predict the price effect on latex gloves.

The three largest rubber-producing countries are Thailand, Indonesia, and Malaysia, which account for roughly 72% of the world's NR exports. Generally speaking, the major areas affected by wintering lie in a tropical belt between 20 degrees N and 10 degrees S.

It mostly affects supply, but supply, in turn, impacts demand. Since the factories always seem to run at full capacity, any glitch causes suppliers to rush out and buy as much inventory as they can in order to avoid being stocked-out.

In summary, supply of NR decreases annually during the wintering period, so glove manufacturers try to account for this. But any unanticipated increase in demand will reduce inventory levels and will likely lead to price hikes in the end product, latex gloves.

By Rob Brown, President, Auric Enterprises, Inc., http://www.glovesbyweb.com

Avian flu impact on the price of **disposable gloves**

Between January 1, 2011 and March 2, 2011 there were 679 cases of Influenza A (H1N1) recorded in Malaysia. Three of the cases resulted in death. In addition to the cases reported by the Malaysian Ministry of Health, Egypt, Indonesia, Cambodia, South Korea and Hong Kong have also reported new cases of the H5N1 virus (avian flu).

According to researchers at MIT, a newly discovered mutation of the H1N1 virus appears to allow easier transmission among humans. Although this does not guarantee that a pandemic will occur, it does make it a more likely threat.

When the H1N1 pandemic peaked back in 2009, there was a severe impact on disposable glove sales. Given that disposable gloves are the first line of defense against such attacks, 2009 saw worldwide sales increase by more than 22 billion pieces (approximately an 18% increase year-over-year). Of that total, roughly half could be directly attributable to the H1N1 virus. The upward spike in orders caused a three to four month backlog from the glove manufacturers. With the backlog of glove orders came higher glove prices.

Should there be a marked increase in A (H1N1) cases in the coming months, the probability is high of another surge in demand for disposable gloves.

By Rob Brown, President, Auric Enterprises, Inc., http://www.glovesbyweb.com

Innovation & new technology in the glove industry

The glove industry is changing because of new innovation and technology that is delivering the fundamental requirements of human physiology for glove performance such as the need for dexterity and touch sensitivity. There is now a revolutionary new category of work glove benefiting the consumer's every needs. Glove companies can be "me-too" companies with little innovation and technology. They rely on visiting foreign factories and shop on pre-determined designs that add nothing but graphics and color schemes to inadequately performing products. The common compromise is to deliver poor performing gloves to our markets under the premise of cheaper "impulse buy" strategies.

To compete in this growing glove market, manufacturers have to understand consumer needs and buying habits. The consumer in today's environment is looking for a glove with improved attributes relating to longevity, dexterity, comfort, grip and health. Key trends in health include a need for less fatigue, better skin protection and no latex, nitrile, or rubber related irritations, rashes, and allergic reactions.

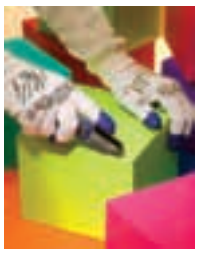
Now, to be successful in the glove market, it's all about finding innovative ways to refresh and modernize products in a way that is relevant to the market and delivers significant differentiation. Performance will pay a larger part in relation with affordability. Though rarely achieved, exceeding expectations is a goal of many companies, especially those driven by innovation. When innovation is in tune with people's needs, then new product development and its market relevance become extremely rewarding.

Companies driven by innovation revitalize the market for everyday products by using novel material science to eliminate problems that most customers despise, but have resigned themselves to accept through a lack of product performance.

Bulky and ill-fitting gloves with little application of relevant technologies will become a thing of the past and it is now essential for glove companies to design products that are focused on the functional requirements of the customer: Without innovation and the application of technology, companies will struggle to keep up with today's competitive environment.

Submitted by O'Neill Innovations, LLC

spotlights



Cut-resistant gloves

CartonCutter™ gloves provide comfort and protection in warehouse operations where cut hazards often occur. These cut-resistant gloves can be worn on either hand making them ideal for use as opposite hand cut gloves. For more information, call **Banom** at (800) 227-7694 or visit the company's website at banom.com. ***Circle 280***

Conquest™ hand protection

Cordova Safety Products proudly introduces Conquest™ Hand Protection featuring soft, form-fitting Nylon/Spandex machine knit shells and durable Foam Nitrile Coatings. Conquest gloves offer outstanding comfort, dexterity and gripping power and are available in four variations to address a multitude of applications. Conquest™ (Palm Coated), Conquest Xtra™ (Knuckle Coated), Conquest Plus™ (Palm Coated with Dots) and Conquest Max™ (Knuckle Coated with Dots). **Cordova Safety Products**, www.cordovaisc.com, (800) 458-8763. ***Circle 281***

Biodegradable work glove

Gloves-online.com has introduced GO Greens™, a new line of environmentally friendly, coated work gloves made from bamboo fibers, a renewable and sustainable plant. Bamboo fiber is comparable to the texture and feel of silk, but with added benefits such as being highly absorbent, naturally abrasion resistant, naturally antibacterial, 100% biodegradable and offering UV protection with a UPF 50+ rating. **Gloves Online**, www.gloves-online.com, (877) 456-8313. ***Circle 311***

Glove clips

Glove Guard® and Utility Guard® glove clips by Glove Guard LP have a proven record of reducing hand injuries and glove loss because gloves will be used if available. They can also be imprinted with a safety slogan to combine the dollars spent on a tool that also helps accomplish safety goals, providing a three-point return on investment. **Glove Guard LP**, www.gloveguard.com. ***Circle 282***

Fire-resistant gloves

Nomex®, used in fire fighting apparel, now in a glove designed for the oil and gas industry — the R2 Fire Resistant. In flash fire simulations, these gloves resulted in zero predicted burn injury. Dual layer goatskin palm provides comfort while back of hand TPR offers impact protection. Watch the actual PyroHands™ test footage at http://tinyurl.com/WCH86716. **West Chester Holdings**, www.west-chester.net, 1-800-647-1900. ***Circle 312***

Wonder Grip® 788CF

Cut-Resistant 13-gauge HPPE/glass fiber seamless liner with extra-tough, oil-resistant Wonder Grip® premium nitrile palm-coating provides exceptional cut and abrasion resistance, comfort and more than twice the grip of conventional nitrile coatings, wet or dry. ANSI Cut-Level 4. Sizes M, L, XL, XXL. Imported and distributed by **LFS Inc.**, 800-426-8860 or gloves@LFSInc.com. ***Circle 283***

On the cutting edge of safety

Safety gloves with Advanced Technology Armor offer the ultimate in cut protection and performance. In fact, when compared to conventional para-aramid gloves, ATA products provide 50 percent better cut resistance, a softer, more comfortable fit and improved flexibility. And lightweight ATA gloves provide better value; they're durable, withstand multiple washings and reduce cost. **Worldwide Protective Products**, (877) 678-4568, www.wwprotective.com. ***Circle 284***

Liquid proof cut protection

Memphis Redcoat Kevlar 6620KV is produced from higher quality resins and plasticizers for more flexibility in a greater range of temperatures. This double dipped PVC 12-inch gauntlet with a sandy finish palm features a seamless DuPont Kevlar lining that provides EN cut level 3 protection. The combination cut-resistant liner and premium PVC create a liquid proof option with cut protection. Actifresh, an antibacterial agent, is used to eliminate odors and promote better hygiene. **MCR Safety**, www.mcrsafety,com, (800) 955-6887. ***Circle 285***

Gloves take on the future

Superior cut resistance, comfort and dexterity put Showa Best Glove's S-TEX glove line in a class by itself. S-TEX gloves feature a patented Hagane Coil™ fiber technology, palm-coating for great durability and open-back design for extra comfort and breathability. S-TEX 300 is ANSI Level 4. S-TEX 303, an ANSI Level 5, has a Kevlar® shell. S-TEX 350 has High-Vis coloring and ANSI Level 4. For more information, visit **Showa Best Glove** at www.showabestglove.com or call (800) 819-6980. ***Circle 313***

Exam gloves

Microflex XCEED® exam gloves deliver industry-leading comfort and protection. The first examination glove to receive an ergonomic certification, XCEED® substantially reduces muscle exertion and minimizes hand fatigue. It offers comfort that rivals the fit and feel of latex, while providing up to 60 percent more strength and more protection than leading brands. **Microflex Corp.**, www.microflex.com/XCEED. ***Circle 286***

Hi-visibility cut protection

QS Safety is proud to promote the 79# Hi-Vis Microfoam from its range of high performance Taeki5 protective gloves. Developed and tested specifically for outdoor and cold chain application where high cut protection and cold resistance are required. Available in the USA at www.cordovaisc.com, www.west-chester.net, www.globalglove.com. Do you Taeki? Now you do! **QS Glove**, www.qsglove.com. ***Circle 287***

Ideal for oil, gas & mining

The new GX105 ToolHandz® gloves from Revco Industries (Black Stallion®) are perfect for oil, gas and mining. These monstrous gloves offer extreme protection from bang-ups and falling debris, while the high contrast design makes it easy to spot fingers. Above all, the amazing flexibility and inner cushioning provide extra protection and comfort. **Revco Industries**, www.blackstallion.com. ***Circle 288***

Cut-resistant gloves

PIP is proud to introduce G-TEK 3GX, three new cut-resistant gloves featuring new Dyneema® Diamond Technology. Developed over a period of four years, the patented ultra-high strength yarns produced with Dyneema® Diamond Technology enable production of these lightweight gloves. They provide outstanding comfort and durability at higher levels of cut resistance (cut level 5). Gloves made with Dyneema® stand up to repeated laundering, sterilization — even bleaching — for long-lasting value. To find out more, visit **Protective Industrial Products (PIP)** at www.pipusa.com. ***Circle 314***

Commercial-grade gloves

When the toughest job calls for the toughest gloves, feel safe knowing the Commercial Grade Impact Pro with Material 4x™ is the glove built for extreme protection. A flexible molded rubber exoskeleton protects the top of your hand from impact and abrasion. Abrasion-prone areas are reinforced with Material 4x™ in the knuckle, finger and palm so you can focus on the task at hand. For more information, visit **Mechanix Wear** at www.mechanix.com. ***Circle 315***

Sarco impact glove

One oil rig injury can cost a company $38,000 in lost time, legal and medical expenses. The Sarco Impact Glove, by Southern Glove Company, features two layers of shock-absorbing armor to comfortably protect the hand from crushing impacts, harsh abrasions and lacerations. For more about the revolutionary Sarco Impact Glove, call **Southern Glove** at (800) 222-1113 or visit www.southernglove.com. ***Circle 289***

Mechanic's glove

New to our MechPro® line is our 7760 mechanic's glove featuring a gray spandex back, neoprene knuckle strap and pigskin leather palm for your toughest work applications. It also offers Thinsulate™ lining and a waterproof membrane for protection against liquids. Call **Wells Lamont Industrial** at 1-(800) 247-3295 for a sample today. ***Circle 290***