

A person wearing a white protective suit, goggles, and a respirator mask is holding a spray gun. The person is wearing a green glove on their right hand. The background is a blurred industrial setting.

Ansell

**ADVANCES IN  
CHEMICAL RESISTANT  
DISPOSABLE GLOVES  
IMPROVE PROTECTION,  
PERFORMANCE AND  
VALUE**



## ADVANCES IN CHEMICAL RESISTANT DISPOSABLE GLOVES IMPROVE PROTECTION, PERFORMANCE AND VALUE

Among the more than 60 million unique registered chemicals worldwide, roughly 80,000 are used regularly across industries and applications — and in a multitude of combinations.<sup>1</sup> Of those, many are hazardous, with accidental contact resulting in adverse reactions ranging from minor skin irritation to third-degree burns and even absorption into the bloodstream with irreversible health effects. Chemical hazards across various occupational environments include carcinogens, mutagens and teratogens. Furthermore, many laboratory workers are involved in the creation of new chemical entities for which toxicological testing has not yet been performed.

National and workplace safety standards require the use of appropriate hand protection wherever the risk of exposure to hazardous chemicals exists. For heavy-duty exposure, there are many Ansell products from which to choose that ensure adequate protection. In a multitude of applications, however, our thin-film disposable gloves are preferred for the added comfort, dexterity and tactility they provide to workers conducting fine manual tasks.

No disposable glove protects from every chemical or compound, though. Commonly constructed of latex, nitrile, neoprene or a combination of these, a glove's unique formulation and thickness determines its protective performance (measured in penetration time, permeation rate and degradation rating), while its design determines for which applications it is best suited (i.e. wet grip or dry, fine versus gross motor skills, etc.). Traditionally, workers have had to choose between the chemical protection of a thicker glove or the increased dexterity (but lower chemical resistance) of a thin glove. With unlimited combinations of chemical hazards and applications, selecting the appropriate disposable glove for the job is often a complicated task.

This paper looks at the differences between traditional chemical hand protection and a new, breakthrough solution from Ansell that delivers advanced protection, performance and value for those working among a range of hazardous chemicals — without sacrificing the dexterity and comfort typically lost with thicker glove options.

## CHEMICAL SPLASH-RESISTANT HAND PROTECTION

---

The thin-walled design of disposable, chemical splash-resistant gloves can deliver excellent fit, comfort, dexterity and grip while briefly resisting permeation from splashes. Typically constructed of latex, neoprene or nitrile, such gloves provide a safe, short-term barrier from low-hazard chemicals such as methanol, isopropyl alcohol or bleach, and can also be used reliably among selected higher-hazard chemicals, such as sodium hydroxide or ethidium bromide, which may not permeate gloves quickly but must still be handled with extreme caution. Each glove's unique formulation lends to its unique reaction with different chemicals: while some glove materials will resist permeation from certain chemicals for hours, others will experience immediate permeation. Likewise, gloves made of virtually the same material but from different manufacturers will perform differently among the same chemicals. All these factors play a critical role in the glove selection process.

Chemical splash-resistant gloves' comfort and performance attributes are especially valuable in applications such as handling tools or laboratory equipment, conducting testing, or performing cleaning or assembly – and anywhere fine manual tasks are conducted, particularly when wearing gloves for extended periods of time. However, once contact with chemicals is made, they should be immediately discarded and replaced before work is safely resumed. That's because splash resistant gloves are intended to provide only a short-term barrier to chemical absorption – they do not guarantee long-term chemical resistance. Some users opt to double don such gloves for added protection, but the same rule applies: both pairs of gloves must be replaced once chemical contact is made. In applications where splashes are frequent, the use of disposable, chemical splash-resistant gloves can lead to a high frequency of daily glove changes and mounting PPE costs.

## CHEMICAL RESISTANT REUSABLE GLOVES

---

In environments where highly hazardous chemicals such as corrosive or carcinogenic substances are present, chemical resistant reusable gloves are often employed. Featuring thicker construction, these gloves resist chemical penetration, permeation and degradation longer than splash resistant gloves. The use of chemical resistant reusable gloves is vital wherever the exposure risk to harmful chemicals is high, or where exposure will be prolonged or immersive. Such gloves are commonly employed in settings such as laboratories, when added protection beyond a single-use solution is required, and in high-hazard chemical production applications where head-to-toe protection is required.

However, their inherent bulk hinders fit, grip and tactile sensitivity, resulting in workers' reduced ability to manipulate equipment, as well as slowed productivity and increased likelihood of spills and accidents. Furthermore, ill-fitting gloves are more likely to be removed or left unworn due to the wearer's discomfort and inability to effectively handle materials. The risks – and costs – of noncompliance are both high and preventable when the proper safety equipment is provided.

## ANSELL INTRODUCES THE THINNEST, CHEMICAL RESISTANT DISPOSABLE GLOVE

Recognizing a gap between gloves that offer ample protection and optimal function, Ansell set out to design and manufacture a solution that delivers not only a high level of chemical protection but also outstanding fit, grip and dexterity. The groundbreaking new Microflex 93-260 is the thinnest disposable glove on the market offering excellent chemical protection against a wide range of chemicals.

### Thin, Soft Film Ensures Dexterity And Tactility

Constructed of an innovative nitrile and neoprene composite, the Microflex 93-260 measures only 7.5 mil (0.19 mm) thick and delivers all the benefits of a single-use, splash resistant glove: exceptional comfort, fit, tactile sensitivity, dexterity and grip, both dry and wet. Textured fingertips ensure a secure grip, even among wet, oily or otherwise slick elements. Together, these attributes reduce hand and forearm muscle fatigue to support worker productivity and compliance, and reduce the likelihood of costly or dangerous accidents and spills.

### Advanced Chemical Protection

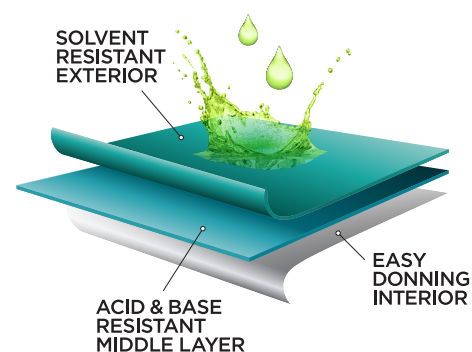
The Microflex 93-260 also delivers advanced resistance to several harsh chemicals including hexane and heptane (see table 1). In fact, the glove delivers exponentially greater resistance to heptane and hexane than other top category competitors. Additionally the Microflex 93-260 achieves EN 374 certification for gloves as it is proven to have a breakthrough time of more than 30 minutes when tested against three of twelve chemicals on the list of standard, defined chemicals determined by the European Committee for Standardization (CEN).

Advanced worker protection is further delivered through the glove's industry-leading AQL level of 0.65 for an exceptional level of freedom from holes, as well as an extended, 12-inch beaded cuff that protects the forearm from spillage (see table 2). Silicone-free formulation and processing ensure increased product protection in controlled environments.

### 3 Layer Design Maximizes Protection And Durability

The glove's unique, triple-layer construction features a soft inner layer specifically designed to enable easy donning, double-donning and doffing. Its flexible middle layer delivers maximum protection against acids and bases, while the durable outer layer ensures excellent puncture, abrasion and cut resistance while delivering maximum protection against organic solvents. Furthermore, the glove's proprietary formulation outperforms competing products in elongation and tensile strength, delivering the highest levels of both elasticity and durability. Because the glove's tough exterior stands up longer in demanding physical and chemical environments, glove longevity is extended and value and productivity are enhanced through fewer daily glove changes.

*Innovative 3 Layer Design\**



*Table 1*

Ansell Microflex® 93-260 Chemical Permeation Breakthrough Times (minutes)	
N Heptane	>480
Hexane	>480
Methanol	22
Sulphuric acid 96%	49

*Table 2*

Ansell Microflex® 93-260 Key Features	
Material	Nitrile/Neoprene
Tensile Strength Mpa	25
Elongation (%)	690
AQL	0.65
Thickness palm (single wall) mm	0.19

\*The method used to produce this 3 layer design is patent pending.

## IDEAL FOR A BROAD RANGE OF INDUSTRIES AND APPLICATIONS

Ansell's Microflex 93-260 is a revolutionary solution for industries and applications where confident, full chemical protection and reliable dexterity are required. Ideally suited for industries ranging from aerospace, automobiles and electronics; to chemical, petrochemical and industrial or academic research laboratories, the Microflex 93-260 affords workers the protection they require without compromising the comfort and performance they deserve. Whether they are processing, refining and blending chemicals; conducting inspection or maintenance; or painting, degreasing and cleaning, workers and employers alike benefit from the versatility of supreme performance and advanced chemical resistance delivered in one glove.



Microflex 93-260

## Conclusion

*In every industry, it is vital that individuals be outfitted with the highest level of hand protection for their environment. Now, users no longer have to trade the comfort of thin, disposable, chemical splash-resistant gloves for the full protection of chemical gloves. When selecting a disposable glove, consult the manufacturer's chemical safety glove selection guide to be sure the product is right for the task. Then, consider Ansell's new Microflex 93-260, an innovative, one-of-a-kind solution that delivers advanced chemical resistance in the thinnest design available for the greatest protection, performance and value. By supporting workers' hand health, employers directly support overall safety and productivity, unequivocal foundations of every company's success.*

**For more information on how advances in chemical resistant disposable gloves improve protection, performance and value visit [www.ansell.com/microflex93260](http://www.ansell.com/microflex93260)**

Ansell, ® and ™ are trademarks owned by Ansell Limited or one of its affiliates.  
© 2016 Ansell Limited. All Rights Reserved.

1. Chemical Abstracts Service, A Division of the American Chemical Society, CAS REGISTRY(SM),  
<http://www.cas.org/content/chemical-substances>

**Ansell**