From rags to riches
Wipers designed for the job at hand
In the never-ending race to improve operations, establish best practices and create an efficient workplace, cleaning is one task which should not be overlooked. Operations like cleaning up spills, machine maintenance, preparing parts for painting, or applying chemicals and solvents are inextricably linked to wider business outcomes, like supply chain management, operational expenses, shop-floor visibility, downtime minimisation, labour optimisation and risk management.

According to the American Institute for Cleaning Sciences 2015 Cleaning Industry Trend Report, manufacturers and industrial stakeholders of today are increasingly using data to engage in more strategic sourcing of supplies, with a focus on improving visibility, efficiency and ensuring compliance with regulations. And with both customers and shareholders focusing on corporate social responsibility, companies must demonstrate consistent improvements in the sustainability of their operations.

Fortunately, regulatory changes and innovation are helping manufacturers and mining companies balance environmental concerns with health and safety and operational costs.

For example, in July 2013, the US Environmental Protection Agency (EPA) modified the hazardous waste management regulations under the Resource Conservation and Recovery Act (RCRA) to conditionally exclude solvent-contaminated wipes from hazardous waste regulations, provided that businesses clean or dispose of them properly. This means facilities in the US can achieve major savings when disposing of used consumables, since the wipes no longer have to be treated as hazardous waste.

All these trends and regulatory changes mean increasing demand for wipers like the WYPALL® X Wiper range from Kimberly-Clark Professional®. In fact, analysts say that demand for wipes will increase by more than two percent per year through 2018.

But wiper manufacturers are not just sitting on their laurels. In recent years, wiper manufacturers have boosted the convenience and performance of their solutions by advancing innovations in material and applications.

Besides softness and tear resistance, innovative manufacturers like Kimberly-Clark Professional® are engineering other properties into their wipes, such as absorbency thickness, abrasion and tear resistance. Overall, there are four main advantages that wipers like Kimberly-Clark Professional’s WYPALL® X range have over traditional laundered products like tea towels and rags: cost, efficiency, environmental and safety.

Introduction

Wipers, made of modern engineered materials, are both lighter and more absorbent than conventional cloths and rags. This yields cost savings throughout the product lifecycle:

- Lower transport costs due to lighter weight and less required volume
- Less space needed for inventory and storage
- Lower resupply frequency
- Lower disposal costs, which are usually determined by weight

The weight issue is particularly important because in most countries, rags and wipers that have been contaminated with hazardous solvents must be disposed of as hazardous waste. The additional weight of rags exacerbates the costs associated with hazardous waste disposal.

In terms of storage, Kimberly-Clark Professional’s studies show that WYPALL Wipers require only 1/5th the storage space of rags, leading to improved space utilisation in facilities, especially in areas where real estate is at a premium.

Unlike rags, they remain consistently clean, and may reduce the introduction of lint into the workplace or onto the work piece

Advantage 1: Cost savings
Advantage 2: Improved efficiency and versatility

In the pursuit of an efficient workplace, every little factor counts. Minutes saved on a repetitive task add up to hours or days saved over an extended period of time. In both material and packaging, Kimberly-Clark Professional’s WYPALL® X Wipers are designed for efficient work.

The WYPALL® X Wipers have been engineered to be durable, and are able to absorb more than two times the amount of water as rags. They can also be used either wet or dry – unlike many other types of wipers, they retain their strength even when wet.

Unlike rags, they remain consistently clean, and will not introduce lint into the workplace or onto the work piece – a particularly important factor for tasks like cleaning surface preparation and priming for painting.

This consistency in sizes, shapes and quality eliminates the time spent by workers trying to choose the correct piece of rag.

WYPALL® X Wipers are supplied in high capacity, mobile or single sheet dispensing packaging options, ready for deployment to the different work environments. Form factors include:
• perforated jumbo rolls
• poly bags
• single sheets
• dispensing boxes in various sizes
• special dispensing options to prevent contamination of the wipers in challenging environments

Being mobile, boxes or rolls of WYPALL® wipes can be placed for convenient access, reducing the downtime needed to walk to a fixed rag dispenser or bin.

MAKING A MATERIAL DIFFERENCE

The material or substrate of a wiper plays a major part in determining its properties during use, as well as its environmental friendliness. The secret behind Kimberly-Clarks’ WYPALL® X range of wipers is the company’s HYDROKNIT material.

HYDROKNIT offers the balance of strength, durability, softness and absorbency. The material is comprised of a mix of cellulose fibres, and polypropylene non-woven fabric. The cellulose provides softness and is also hydroscopic, meaning it readily soaks up and holds liquids like water, while being resistant to most solvents. The polypropylene provides toughness and the ability to soak up more than its own weight in oil and grease.

During manufacturing, the soft and absorbent cellulose fibres are bonded into webs, and to the polypropylene non-woven fibre, thanks to agitative action from high pressure water jets.

Because the process uses jets of water to entangle the fibres to keep them together, the wipers contain no adhesives or binders, reducing surface residue and contaminants. At the same time, the resulting fabric absorbs liquid faster, is more resistant to tearing, while being more cost-effective to manufacture than conventional textiles.

This modern engineered material also means the wipers are reliable, keep their shape and can be used again and again. They are ideal for tough tasks like machinery cleaning, and are strong and durable whether dry or wet.
Many factors inform the environmental friendliness of a cleaning/wiping solution throughout its entire lifecycle:

- The greenhouse gas emissions and energy consumption associated with transporting the product from the supplier to the work site, and then conveying the used materials from the facility to landfill
- The amount of space needed in the landfill to accommodate the used product
- The biodegradability of the product within the landfill
- The greenhouse gas emissions that occur when the waste product degrades in the landfill

Despite being disposable wipers, the WYPALL* X Wipers have greater absorbency and better wiping performance, and are durable enough to be rinsed and reused.

Being lighter and more compact than rags, the wipers also require less energy for transportation throughout the entire life cycle, and they take up less space, both in storage and in the landfill.

Additionally, the cellulose fibre base of the wipers readily decompose once they make it to the landfill.

In a commissioned study, business services consultancy GHD compared the lifecycle of WYPALL* X80 wipers against waste rags. They found that WYPALL* Jumbo Roll Wipers required 59 percent less energy during the distribution and disposal stages compared to waste rags, and also generated 64 percent less greenhouse gases. When in the landfill, the WYPALL* X80 wipers were found to occupy 27 percent less space compared to waste rags.

Overall, after all the factors are taken into account, WYPALL* Wipers were found to reduce waste by 78 percent compared to rags.

Kimberly-Clark Professional’s studies show that WYPALL* Wipers require only 1/5th the storage space of rags, leading to improved space utilisation in facilities.

The issue of wiper quality comes to a fore when considering the safety of operations, especially in applications associated with healthcare, food and beverages. The unknown quality of rags, for example, rules them out for use in personal wiping, or for cleaning surfaces that come into contact with food.

By contrast, all wipers in the WYPALL* X range are HACCP certified for use on food contact surfaces. Throughout the manufacturing, packaging and supply chain processes, the wipers are protected from contaminants, for increased safety and hygiene. There are even special packaging options available to protect the wipers from contaminants that may be present at the work environment.

Additional, the highly absorbent nature of the WYPALL* X wipers, and their resistance to most solvents means faster containment and cleanup of potentially hazardous spills, with minimal issues with splashing, dripping and cross contamination. A versatile choice of wipers.
A versatile choice of wipers

The Kimberly-Clark Professional WYPALL® X Wiper range is available in a variety of types, engineered for various tasks. By choosing the most appropriate variant for the different areas of work, site managers can ensure maximum performance and efficiency, while reaping the benefits of consistent quality and sizes.

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<thead>
<tr>
<th>Name</th>
<th>Description</th>
<th>Properties</th>
<th>Best suited for</th>
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<tbody>
<tr>
<td>WYPALL X50</td>
<td>Light-duty four-ply wiper, made from tissue with polyester scrim nesting</td>
<td>Absorbs spills quickly and maintains strength even when wet</td>
<td>Food preparation, wiping surfaces, absorbing light spills like fine oil or grease, polishing glass or stainless steel, applying thinners and solvents</td>
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<tr>
<td>WYPALL X60</td>
<td>Multipurpose cloth wiper made from HYDROKNIT</td>
<td>Conformable and lightweight for reaching delicate and difficult areas, but strong</td>
<td>Personal cleaning in healthcare environments, cleaning precision or delicate parts, scrubbing off adhesive, oil and debris, applying lubricants, cleaning glass and applying solvents</td>
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<tr>
<td>WYPALL X70</td>
<td>Regular duty cloth wiper made from HYDROKNIT for tough jobs</td>
<td>Stays soft whether it is wet or dry, and long-lasting toughness, allowing rinsing and re-use</td>
<td>Suitable for food contact surfaces, wiping away grease, oil and solvents, cleaning tools and machinery, heavy maintenance tasks, cleaning metal surfaces</td>
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<tr>
<td>WYPALL X80</td>
<td>Extra strong heavy duty cloth wiper made from HYDROKNIT</td>
<td>Strong and thick, it can be used on tough surfaces without falling apart. Can also be rinsed and reused, and is the ideal replacement for waste rags.</td>
<td>Tough maintenance and heavy duty wiping tasks involving rough surfaces, maintenance, preparing surfaces</td>
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Conclusion: Support and reliability

Hundreds of manufacturers and users in a wide variety of industries use Kimberly-Clark Professional supplies and consumables in their facilities, benefiting from improved efficiency, cost-effectiveness, environmental outcomes and safety.

During the research and development of their products, Kimberly-Clark Professional considers their entire lifecycle and use. From material engineering to packaging to biodegradability, products like WYPALL® X Wipers are designed to accelerate tasks around the workplace, across a range of industries.

To find the best solutions for your specific needs, contact Kimberly-Clark Professional for a consultation.
REFERENCES


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   http://www.epagov/wastes/hazard/wastetypes/wasteid/solvents/wipes.htm


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5. pp.1-2, Kimberly-Clark Professional Worldwide, *Fact Sheet: Environmental Impact of WYPALL X80 Wipers vs. waste rag*