



Hydrogen Peroxide

Webinar Notes



Hydrogen Peroxide

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Hello, and thank you for joining us for this discussion on Hydrogen Peroxide. We've been getting excellent feedback on these webinars. We're very thankful for the input and suggestions that have been coming in. So please be free to send your suggestions through. We have found that they've been adding good value to many businesses and cleaning operations. So, the more input and the collaboration we have with yourselves, our valued clients, the more value we can add to these events.



An insight into Hydrogen Peroxide



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Hydrogen Peroxide,

There is about 4.5 million tons of Hydrogen Peroxide used annually across the globe. About half of what is manufactured is used in the paper and pulp industry. Our section of the market is a very, very small consumer of hydrogen peroxide comparatively but it is a very important chemical in cleaning. There is hardly a material which has got such a myriad of different uses.

Our intention today is to show you how you can use hydrogen peroxide to its best ability. There's many people using hydrogen Peroxide that are not getting the best out of it. As a result, in some instances, it's got a bit of a bad rap. We certainly intend to change that today in your perception, to show you how you can get the best out of it, use it to its maximum potential, and we'll try and make it interesting as we go along.

Now, I'm going to share with you a couple of very interesting blends, or formulas at the end of this presentation. The one being as to how you can make up your own Part A, Part B mix. So, there is some good takeaways from this session.

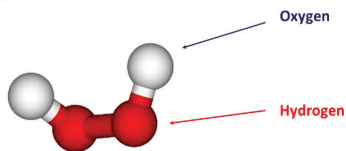
Hydrogen Peroxide

CAS number: 7722-84-1

CAS name: Hydrogen Peroxide

Formula: H₂O₂

Molecular Structure:



Technical Information



Hydrogen Peroxide

Hydrogen Peroxide is available in both a liquid and powder form.

Hydrogen Peroxide 50% strength

Hydrogen peroxide content: 50%
Active oxygen content: 23.5%
pH: 2.5 – 3.0
Form: liquid
Other popular strengths are: 3% & 35%



Sodium Percarbonate

Hydrogen peroxide content: 27.5%
Active oxygen content: 13%
pH: 10.5
Form: powder



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The Hydrogen Peroxide Molecule

The hydrogen peroxide molecule has got two hydrogen and two oxygen atoms. It's similar to the water molecule H₂O, however it has an additional oxygen molecule, which is what makes the hydrogen peroxide molecule unstable. And also, what provides the oxidising efficacy for bleaching, de-staining and disinfection.

Hydrogen Peroxide – Liquid & Powder

Hydrogen Peroxide is available in two forms. The first being the liquid version of hydrogen peroxide, which we're mostly familiar with, such as Actichem Perox, which is a 50% strength hydrogen peroxide. Other popular strengths are 3% and 35%. The 35% strength is popular in Europe and USA. You need to ensure that you know what strength you have on hand. The active oxygen content in hydrogen peroxide 50% is close to half of it's active strength - 23.5% and is acidic in pH.

The other form of hydrogen peroxide is powder with sodium percarbonate being the most common type used today. You could regard it as a powdered form of hydrogen peroxide. When sodium percarbonate is dissolved in water it releases both the alkaline salt sodium carbonate (soda ash) and hydrogen peroxide. This means that the hydrogen peroxide is released into an alkaline environment. The active hydrogen peroxide content is 27,5% with the oxygen content being 13% and the pH alkaline.

How it works

In simple terms Hydrogen Peroxide releases oxygen, which oxidises (changes the molecular structure) of colour molecules. In disinfection it breaks down pathogen cell & DNA structure.

At a closer look – it's not just oxygen which is released but **hydroxyl radicals** can be produced by catalysts which are significantly more powerful. How to optimise the generation of these radicals determines its performance.

Hydrogen Peroxide

Hydrogen Peroxide is not a stable compound, so is always decomposing into water and oxygen.

Need it **STABLE** for storage

- Maintain an acidic pH (liquid)
- Prevent exposure to light
- Store in cool temperatures
- Exclude contaminants

Need it **ACTIVE** for USE

- Increase pH to alkaline
- Provide external heat source
- Provide catalyst
- Provide time

Technical Information



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Hydrogen Peroxide – stable for storage & active for use

Hydrogen Peroxide, as previously mentioned, is not a stable compound. It is always decomposing into water and oxygen. It obviously needs to be stable for storage purposes. Sodium Percarbonate obviously is stable in it's powdered form giving it extended storage life. For maximum hydrogen peroxide liquid stability, the solution needs to be acidic, with no exposure to light (UV), stored in a cool environment and exclude intrusion of contaminants. It is worthwhile to review your storage of hydrogen peroxide in the light of this. Solutions stored in hot vans are very likely to lose efficacy rapidly. And the worst thing is that you won't know, what strength you've got left in the container. A key point is the exclusion of contaminants. Contaminants very, very quickly degrade hydrogen peroxide. Two key ways to prevent contaminant ingress is to never return unused hydrogen peroxide back into the bottle, always discard what you don't use. The second recommendation is to always return the cap/lid on the container directly after decanting or use.

In it's stable, storage state Hydrogen Peroxide is also at it's lowest activity and efficacy. It is in it's comfort zone. To get the best efficacy from hydrogen peroxide, the solution needs to be taken out of it's stable, storage state to facilitate the faster release of oxygen and it's oxidising activity. This is achieved by increasing the solution pH to the alkaline region and/or increasing the solution temperature and/or adding a catalyst.

The release of oxygen results in the oxidising activity associated with Hydrogen Peroxide. Furthermore, the oxidising activity does not only involve oxygen release, but also the release of hydroxyl radicals which have a significantly stronger oxidizing potential. The quantity and effect of these hydroxyl radicals can be significantly enhanced by the employ of select activating (catalyst) agents.

The key to optimising hydrogen peroxide efficacy often includes chemistry to optimise the generation of these radical hydroxyls.

The oxidising action in bleaching & stain removal involves a change to the molecular structure of colour molecules, especially the larger, stain colour molecules. It is selective in its oxidising activity, enabling the removal of stains from fabrics without removing the dye of the fabric at the same time, and is hence regarded as a colour-safe bleach. In disinfection, it breaks down the pathogen cell and/or the DNA structure.

Reduction of Surface Tension

The Surface Tension of Hydrogen Peroxide is higher than water. Therefore, it does not wet-out the substrate efficiently.

The addition of a wetting agent will significantly increase its speed and efficacy of action..

Technical Information



Hydrogen peroxide

Optimizing Hydrogen Peroxide activity. *Optimizing hydroxyl radicals.*

Increased activity in alkaline solution

- Increase pH above 7,5. Ideal is around pH 9,5 - 10
- Laundry – Hydrogen Peroxide is added into the alkaline break wash cycle.
- Two-part stain removers increase pH to alkaline region
- Sodium Percarbonate – alkaline when dissolved in water

Heated solution

- Increase solution temperature
- Laundry – it's mostly a hot cycle into which Hydrogen Peroxide is added.
- Two-part stain removers – increase performance by using a hot iron
- Sodium Percarbonate – need hot water for effective action

Dwell Time

- The action is a chemical reaction - dwell time makes a significant difference
- For delicate surfaces use a weaker blend but extended dwell time.
- Many laundry soaks rely on dwell time.

Optimizing Hydrogen Peroxide

The key to optimizing the oxidising activity of hydrogen peroxide is to facilitate a controlled and increased release of oxygen and to maximise the generation & quality of hydroxyl radicals. So, there's two things going on here, although inter-related. The one is the performance of the release of oxygen, and the second is the improved generation of hydroxyl radicals.

Increase solution pH to alkaline – increasing the Hydrogen Peroxide solution pH from its supplied acidic state to the alkaline region provides a very effective and efficient way of achieving increased activity from hydrogen peroxide. An increase of pH to above 7.5 is required with the ideal range being around pH 9.5-10.

In multistage laundry applications, Hydrogen Peroxide is always added into the alkaline, break wash cycle. An interesting fact is that chlorine is exactly the opposite. Chlorine works best the closer it gets to pH neutral. So, hydrogen peroxide and chlorine work exactly the opposite to each other.

Two-part oxy stain removers work by increasing the pH to the alkaline region in addition to introducing wetting agents, etc.

Sodium percarbonate, the powdered version of hydrogen peroxide, releases oxygen into an alkaline environment when dissolved in water. This is due to the presence of sodium carbonate (soda ash) in sodium percarbonate. Sodium percarbonate one of the most effective oxygenated solutions available.

Increase solution temperature – Increasing the temperature of a hydrogen peroxide solution significantly improves the oxidising efficacy.

In multistage laundry applications, Hydrogen Peroxide is always added into a hot cycle. Once again, this is opposite to chlorine. Chlorine does not work well in a heated solution but requires a cool solution for best activity.

Two-part stain removers are used with the “hot iron” method for stubborn carpet stains.

Sodium percarbonate, the powdered version of hydrogen peroxide, requires dissolving in hot water for effective action. It is recommended that hot tap water of at least 60°C is used.

Dwell Time – Dwell time doesn’t accelerate the oxidising activity of Hydrogen Peroxide but rather recognises that oxidation is a chemical reaction and which dwell time befits. Dwell time makes a significant difference to stain removal, bleaching and disinfection. Furthermore lower percentage of hydrogen peroxide with extend dwell times can often achieve comparable results. This method minimises potential substrate damage and is great for delicate surfaces such as fine, natural fabrics.

Useable Solution Life

It is important to note that whilst increasing pH to alkaline and/or using a heated solution significantly accelerates and enhances the oxidation performance, the Hydrogen Peroxide solution is more rapidly expended. The boosted hydrogen peroxide solutions usable life would typically range from 30 -60, depending on how it was boosted. So always mix up fresh hydrogen peroxide solution and use it immediately.

Substrate Wetting

There’s one last aspect in relation to hydrogen peroxide, which makes a huge difference. This is the reduction of surface tension. The surface tension of hydrogen peroxide is higher than water. Water has a surface tension of just under 73 dynes, with hydrogen peroxide being at least one or two dynes higher depending on it’s concentration. This means that it does not wet out substrates efficiently, especially fibres, porous surfaces, soiled surfaces, bacteria and moulds. The addition of a compatible wetting agent significantly improves the speed and efficacy of hydrogen peroxide.

Substrate Care

Accelerating the oxidising propensity of Hydrogen Peroxide means that it works much faster and efficiently – however it is also more aggressive and can damage delicate fibres and effect dyes.

Delicate substrates such as cotton and wool fibres, should not be treated with an accelerated form of Hydrogen Peroxide. It is recommended that a weaker, un-accelerated Hydrogen Peroxide solution is used but with an extended dwell time.

For resilient surfaces, such as polyolefin fibres, solution dyed nylon fibres, timber, natural stone and concrete the boosted hydrogen peroxide solutions are ideal.

Hydrogen peroxide

Optimizing Hydrogen Peroxide activity. Optimizing hydroxyl radicals.

Optimized Hydrogen Peroxide in Disinfection

A Hydrogen Peroxide based disinfectant which includes activators, wetting agents and pH moderators perform significantly better than Hydrogen Peroxide alone.

	EN1650 Suspension Test	EN13697 Carrier Test
Hydrogen Peroxide 8%	<3.3 log Aspergillus.Br <3.3 log Penicillium.Ch	2.1 log Aspergillus.Br <1.4 log Penicillium.Ch
Actichem AP610 Percide	>5.1 log Aspergillus.Br >5.1 log Penicillium.Ch	3.1 log Aspergillus.Br >5.1 log Penicillium.Ch
Actichem AP610 Percide + Boost	>5.1 log Aspergillus.Br >5.4 log Penicillium.Ch	>6.3 log Aspergillus.Br 6.02 log Penicillium.Ch

Technical Information



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Optimised Hydrogen Peroxide (liquid) in Disinfection

This table illustrates the increased efficacy of optimised hydrogen peroxide versus hydrogen peroxide in it's original, off-the-shelf state. The test results displayed, compares the following solutions;

- Hydrogen Peroxide at 8% strength in it's original, off-the-shelf state
- Percide – a 7.9% hydrogen peroxide solution which is optimised, includes activators and wetting agents. It has an acidic pH.
- Percide + Boost – Percide blended with Percide Boost which increases the pH to the alkaline region.

As will be noted by the log reduction figures, Percide (optimised hydrogen peroxide) exhibits significantly enhanced performance, and Percide + Boost exhibiting even stronger performance.

Note that a 3 log reduction equates to a 99.9% reduction kill rate, a 4 log reduction equates to 99.99% and 5 log reduction equates to 99.999% kill.

Technical Information



Hydrogen peroxide

Optimizing Hydrogen Peroxide activity. Optimizing hydroxyl radicals.

Optimized Hydrogen Peroxide in Disinfection

A Hydrogen Peroxide based disinfectant which includes activators, wetting agents and pH moderators perform significantly better than Hydrogen Peroxide alone.

Percide IC (also sold as RG615 Mould Remover)					
EN 13697:2015+A1:2019 (E) Test report No. VX-TR-22-0173	Neat	Pseud areuginosa	1 min	1.79 lg R	Fail
			2 min	>6.35 lg R	Pass
			5 min	>6.35 lg R	Pass
	Neat	Staphylococcus aureus	1 min	<1.47 lg R	Fail
			2 min	>6.89 lg R	Pass
			5 min	>6.89 lg R	Pass
3% w/w Hydrogen Peroxide					
EN 13697:2015+A1:2019 (E)	Neat	Pseud areuginosa	1 min	1.65 lg R	Fail
			2 min	2.77 lg R	Fail
			5 min	4.31 lg R	Pass
	Neat	Staphylococcus aureus	1 min	<1.28 lg R	Fail
			2 min	>1.28 lg R	Fail
			5 min	>1.28 lg R	Fail

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Optimised Hydrogen Peroxide (liquid) in Disinfection cont'

Further tests were conducted using 3% Hydrogen Peroxide solutions against bacteria, namely Pseudomonas aeruginosa and Staphylococcus aureus.

- Hydrogen Peroxide at 3% strength in it's original, off-the-shelf state
- Percide IC – a 3% hydrogen peroxide solution which is optimised, includes activators and wetting agents. It has an acidic pH.

As will be noted by the log reduction figures, Percide IC (optimised hydrogen peroxide) exhibits significantly enhanced performance against the bacteria growth, than off-the-shelf Hydrogen Peroxide at the same actives level.

Technical Information



Hydrogen peroxide

Optimizing Hydrogen Peroxide activity. Optimizing hydroxyl radicals.

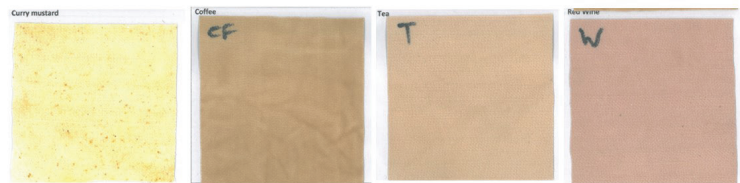
Optimized Hydrogen Peroxide in Stain Removal

Heating, increasing the pH to alkaline and time all make a significant improvement in stain removal.

A trial was conducted using 4 swatches stained with;

- Curry mustard
- Coffee
- Tea
- Red Wine

Each set of swatches were treated with different forms of hydrogen peroxide



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Optimised Hydrogen Peroxide in Stain Removal

The following images show a series of stain removal trials using Hydrogen Peroxide in a variety of different ways.

The trial was conducted using 4 swatches stained with;

- Curry mustard
- Coffee
- Tea
- Red Wine

Guide to the following stained fabric swatch pages

The stained cotton swatches are treated and arranged as follows, on each sheet.
 Except where mentioned otherwise, each swatch was treated with off-the-shelf 5% strength Hydrogen Peroxide, with a 10 min dwell time, at ambient temperature.



Untreated swatch

Hydrogen Peroxide

Staining Agent



 <p>Red Wine</p> <p>Treated with 5% Hydrogen Peroxide</p> <p>5% peroxide</p>	 <p>Red Wine</p> <p>Treated with 5% Hydrogen Peroxide 12hrs dwell time</p> <p>5% peroxide 12 hours</p>	 <p>Red Wine</p> <p>Treated with 5% Hydrogen Peroxide Temp 60°C</p> <p>5% peroxide temp 60°C</p>
 <p>Red Wine</p> <p>Treated with 5% Hydrogen Peroxide Mixed with 0.5% Colloidal Boost</p> <p>5% + colloidal boost</p>	 <p>Red Wine</p> <p>Treated with Hydrogen Peroxide Part A & B mix</p> <p>Peroxide A&B</p>	 <p>Red Wine</p> <p>Treated with 3% Sodium Percarbonate Temp 60°C</p> <p>3% percarbonate</p>

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Red Wine Stained Swatch Sheet

This gallery of swatches has been stained with red wine.

As described, each swatch has been treated with a different version of Hydrogen Peroxide. The results demonstrate the remarkable increase in oxidising performance where the Hydrogen Peroxide has been optimised.

An increase in temperature (top right) and an increase in pH to alkaline (lower middle) are especially notable for improved performance. Hence these options are used extensively in carpet cleaning and laundry applications.

The sodium percarbonate solution combines both increased temperature and an alkaline solution, providing near perfect results as anticipated. This powerful option is used especially in hard surface cleaning, kitchen and laundry applications.

The extended dwell time demonstrates improved performance especially desirable for treating delicate and fine fabrics where boosted hydrogen peroxide could cause damage.

The hydrogen peroxide plus Colloidal Boost illustrates the increased performance gained by adding a wetting agent. The addition of hydrogen peroxide to a carpet prespray or encap solution essentially employs this benefit.

These results are further illustrated in the galleries following with different staining agent types.



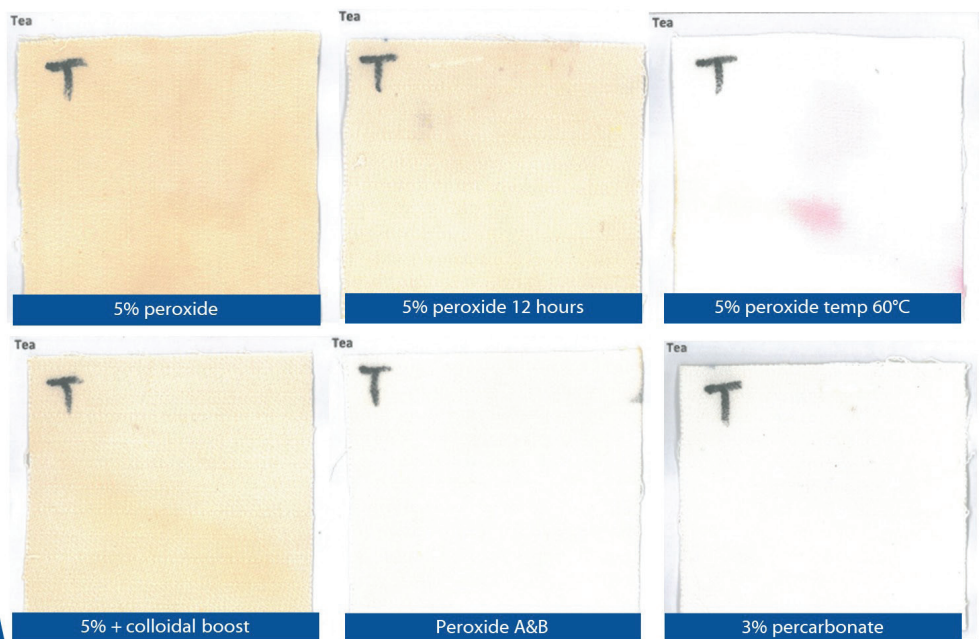
Hydrogen Peroxide Coffee



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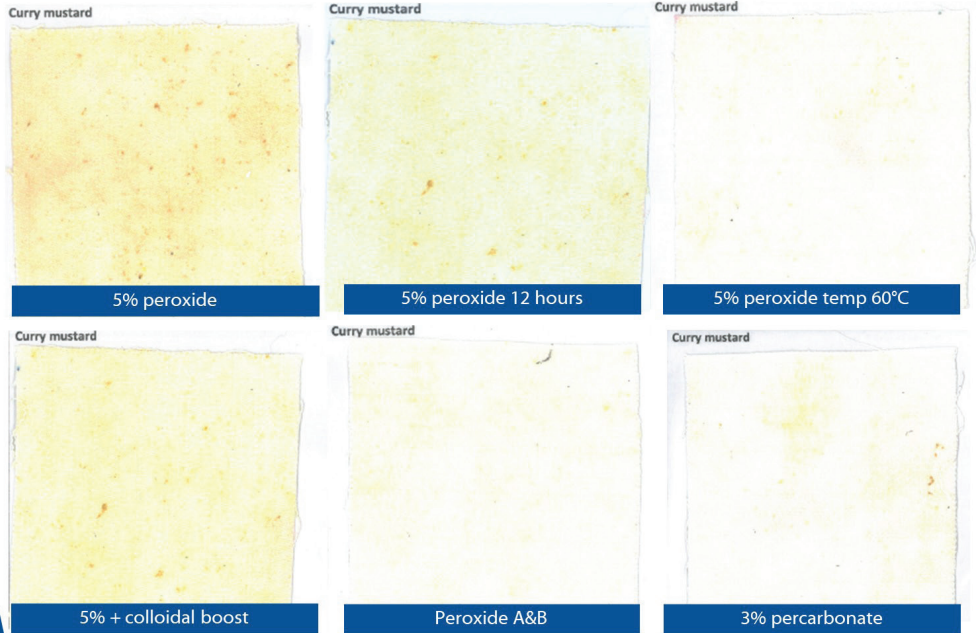
Hydrogen Peroxide Tea



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Hydrogen Peroxide Curry Mustard



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Solution quantities based on using 50% active Hydrogen Peroxide product (eg Perox)

Hydrogen Peroxide



Applications

Cleaning booster for synthetic carpets (1,5% active)

- Add to Encap Solution – 30ml / Lt of RTU solution
- Add to Prespray solution – 30ml / Lt of RTU solution

Carpet & fabric destainer (3% - 5% active)

- Wool fibres – 60ml / Lt of water
- Synthetic fibres – 100ml / Lt of water

Cleaning booster & stain removal for tiles & stone

- Add 10g Sodium Percarbonate (Oxyboost) / Lt of RTU alkaline solution
- Mix 10-30g Sodium Percarbonate (Oxyboost) / Lt of RTU alkaline solution.

Disinfection

- Disinfection in laundry cycles (liquid & powder)
- Mould Removal & Biohazard decontamination
- Hospital Grade Disinfection
- Antiseptic use

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Applications of hydrogen peroxide

Summarised on this slide is a variety of typical applications of Hydrogen Peroxide liquid and Sodium Percarbonate. Note that mixtures assume the use of 50% strength hydrogen peroxide.

As a booster for carpet cleaning, hydrogen peroxide should be used at 1.5% active. This applies to both regular prespray and encap detergent solutions. This blend has been found by many users to remove many stains whilst cleaning and lifts the overall appearance of the carpet. This is especially effective on synthetic carpets, especially polyolefins. Results are not as marked on wool carpet.

When added to a carpet prespray or encap detergent for use as a stain removal agent, the recommended proportions are max 3% for wool fibers and 5% for synthetic fibres. The WoolSafe organization recommends 3% as the maximum active hydrogen peroxide level spotter use on wool fibres, and 1.5% as an addition to carpet presprays. Synthetic fibers, however, can handle a 5% actives solution.

Sodium percarbonate is the recommended product for use as a cleaning booster, and stain removal for tiles and stone. It is easily added to alkaline or neutral tile cleaners with no risk of damage to tiles or delicate stone substrates.

Disinfection and stain removal in laundry application utilises both the liquid and the powder options.

Mould removal and biohazard decontamination, use both liquid hydrogen peroxide and sodium percarbonate options. The Actichem Percide being one such hospital grade disinfectant product. Hydrogen Peroxide is used extensively in antiseptic applications for disinfecting wounds, etc. In hospitals, 1.5% and 3% hydrogen peroxide are widely used.

Hydrogen Peroxide



Applications

There's a myriad of problems which the intelligent use of Hydrogen peroxide can solve.

- Cellulosic Browning Removal
- De-greying & brightening of polyolefin carpets
- Fire Restoration
- Ceiling and air vent cleaning
- Removal of moss and mildew from wooden decks
- Removal of weathering from wooden decks.
- Cleaning of espresso coffee machines.
- Removal of wine and colour stains from marble and fine stone
- Removal of stains from tea and coffee cups
- Removal of iodine stains
- Removal of tough turmeric mustard, berry stains & more.

"How to Remove" guides for these and more will be emailed to all attendees

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Applications of hydrogen peroxide cont'

There's a myriad of different problems which the intelligent use of hydrogen peroxide can solve. There's a list shown in this slide which includes carpet cleaning, household use, hard surface cleaning and even the cleaning of espresso coffee machines. A guide will be provided which provides simple mixtures of hydrogen peroxide for each of these applications.

Hydrogen Peroxide



Applications

Part A & B (100ml)

1. 80ml water
2. 10ml Actichem Bust
3. 10ml Actichem Perox

- Ideal for synthetic carpets, natural stone, concrete
- Use hot water for even greater performance
- Natural & delicate fibres - dilute the above blend 1:1 with water
- Remember the more you boost hydrogen peroxide (adding heat and alkalinity), the faster and more aggressive it will work. But remember this can also damage delicate fibers and dyes. Always pretest – if concerned use a weaker solution and leave for longer

“Never spend money on two-part oxidisers again”

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Part A & B mix

Finally, here is an easy to mix recipe for making your own Part A & B oxidising stain remover. Start with 80mls of water and add 10mLl of Actichem Bust and 10mls of Actichem Perox. This mixture must be used within 40-60 minutes. This provides a powerful Part A/Part B oxidizing destaining mix for removing tough colour stains including red wine, beverages, cordial, medicine and cosmetics. So never spend money again on two-part oxidizing kits.

A couple of extra tips and benefits;

- This mix is suitable for resilient substrates and fibres including synthetic carpets & fabrics, tiles, concrete, natural stone, timber and vinyl.
- Use hot tap water for even greater destaining power. This can eliminate the need for using the hot iron method
- Remember that natural and delicate fibres can be damaged by these activated versions of hydrogen peroxide. So, dilute the above blend 1:1 with water for delicate fibres and use ambient temperature water (not hot).

Remember there that the more you boost hydrogen peroxide by adding heat or alkalinity, the faster and more aggressive it'll work. But this can also damage delicate fibres and dyes. So, keep this front of memory, especially in your training of technicians and always pre-test if you're concerned.

Q&As

What Actichem products contain hydrogen peroxide?

In the carpet cleaning range, Actichem has Spotaway U, and Conquer O2.

Then of course there's the Perox itself, which is a 50% hydrogen peroxide.

For mould remediation and bio-decontamination, Actichem has Percide, which has become a very, very popular mould remediation product, plus it's booster. And the Responsibly Green Mould Remover (also sold as Percide IC), which we mentioned earlier.

If I add hydrogen peroxide to a prespray, such as Performance Gold, but don't end up using all the prespray, the efficacy of hydrogen peroxide will dissipate, however, does this affect the efficacy of the Performance Gold? And if so, how and why and to what extent?

No, it won't affect the Performance Gold solution itself. The hydrogen peroxide, as you rightly mentioned, will dissipate over time. But no, the Performance Gold will be good to use thereafter, with no detrimental effect.

Can Colloidal Boost at a given concentration be used as a boost instead of purchasing the boost version of Percide?

Colloidal Boost would certainly add some booster properties to Percide. However, the booster version of Percide has several specific activators that relate only to hydrogen peroxide. You'll certainly get significantly greater efficacy out of the Percide Boost than you would out of the Colloidal Boost when mixed with hydrogen peroxide or Percide.

You said not to use a boosted version of Hydrogen peroxide on delicate fibres, which means it will take longer to work on. But delicate fibres, there's a risk of browning if they are left wet for too long. How do we get the balance?

Firstly, the amount of hydrogen peroxide solution that is added to these delicate fibres must not be a soaking amount and should be speed dried after the treatment. Secondly the hydrogen peroxide mix will be acidic or close to acidic limiting the fibre's propensity for browning.

What is the best product to use when cleaning outdoor furniture/seats? Will it affect the water repellency of the fabric? Will you have to apply a fabric protector after cleaning?

To a certain extent, that's going to come down to the quality of the fabric protector. And remember that outdoor fabric protection stands a very high risk of getting damaged by the UV rays of sun. The water repellency will not be affected more with hydrogen peroxide than with a standard upholstery cleaning detergent. I would recommend a top-up application of fabric protection every two to three cleans.

Does the regular Conquer have hydrogen peroxide in it?

The regular Actichem AP462 Conquer does not have hydrogen peroxide in it. The AP478 Conquer O2 is the version of Conquer which contains hydrogen peroxide. These are two separate products.

Would use of heat transfer be beneficial with the Actichem hydrogen peroxide products or no need to?

Heat transfer is a great way of enhancing hydrogen peroxide performance because the increase of solution temperature significantly increases the oxidising activity as we've learnt. Whilst the Actichem hydrogen peroxide products are already optimised, heat will by definition further increase their performance.

If you run out of Pet and Flood, will a peroxide mix or Percide mix be helpful in removing any bacteria related to urine decontamination? Or could it be used in addition instead of using an enzyme?

This brings to mind another little mix I'd like to share with you. This is that the performance of Pet and Flood can be further increased by the addition of Hydrogen Peroxide. Add 30-50ml Perox per litre of ready-to-use Pet and Flood. This enhances the ability of Pet & Flood to remove any urine stain and further increases its decontamination, germ killing ability.

If you do not have Pet and Flood however, a hydrogen peroxide mix will go a long way to decontaminating and stain removal in urine applications. I would recommend a 3% mix (60ml Hydrogen peroxide per litre of water) and add a small amount of Performance Plus or Encap Fine Fabric as a wetting agent. The addition of this "wetting agent" is critical to performance.

This can also be used instead of an enzyme blend.

Mould on outdoor furniture fabrics best treated with what products?

Mould on outdoor furniture fabrics is best treated with the Actichem Mould Remover, or Actichem Percide. Percide is recommended for use by professional cleaning contractors. Homeowners are best using the Actichem RG615 Mould Remover as it has a safer hazard profile but still provides outstanding results. These products provide good, failure free effect on outdoor furniture, killing the mould spores and removing the stains.

Difference between a Hydrogen peroxide spotter as opposed to a red spot remover?

Red Spot removers are typically based on reducing agents. These are metabisulfite or bisulfite. Going back to earlier years, there only was the metabisulfite reducing agent A&B spot removers. When the advent of hydrogen peroxide spotters hit the market, the two part hydrogen peroxide products displayed many of the performance characteristics of the reducing agent sulphite two part spot removers and have largely taken over 80-90% of their role. So, there is a large overlap between the two types but the hydrogen peroxide two-part kits have a wider scope of action and tend to be preferred. The reducing agent red spot removers, such as Actichem Red Fix are typically only used nowadays for specific red dyes found in Kool Aid or cordial type drinks and some medicines.



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