



WAREHOUSE MATRIX

A.B.N 29 764 742 043

PO Box 24
Balaklava SA 5461

Telephone 08 8862 2078
Facsimile 08 8862 2033

UNDERSTANDING CLEANING CHEMICALS

Cleaning is about "DIRT". If there were no dirt we would not need cleaning chemicals.

The thing to consider is that dust and dirt in them selves do not require chemical cleaning. A dust mop will remove dust and dirt from a floor. It is only when this dust and dirt mixes with moisture (water, oils, foodstuffs etc.) that it forms a matrix and becomes adhered to the surface that wet cleaning becomes necessary. It then depends on the type of soilage, the substrate and the chemical used as to how successful the cleaning operation will be.

As you are aware there are both liquid and powder detergents in the market place. Peerless primarily offer liquid products. The reason for this is that liquids are easier to disperse into solution. Powder cleaners cut back your cleaning efficiency by leaving residues behind.

Liquid cleaners are made up of solvents and compounds. To us it means a liquid that dissolves other compounds. The most common solvent used is WATER. Other solvents include petroleum solvents. (eg. Mineral Turps, Toluene), Alcohol (Methylated Spirits) Butyl Glycol and in fact most liquids included in a product.

THE pH VALUE

The pH scale relates to the acidity or alkalinity of a product as a ratio of PURE water. There is probably to much stress put on neutrality of detergents in the cleaning industry. In most cases a certain amount of acidity or alkalinity is necessary for good cleaning. It is only at the extreme ends of the scale that pH becomes a problem.

eg. Soft drinks have a pH of about 3.5
Common hand soap a pH of about 9.0 without deleterious affects to hands
Milk of Magnesia (Antacid) a ph of about 10.5

Products of very high or low pH need extreme care when handling and full protective clothing (safety glasses, rubber gloves etc.) should be worn.

The pH scale ranges in value from 1 to 14. A pH of 1 indicates high acidity while a pH of 14 is highly alkaline. A pH of 7 is neutral and is obtained while testing pure (distilled) water.

Consider the pH diagram below.

0.....1.....2.....3.....4.....5.....6.....7.....8.....9.....10.....11.....12.....13.....14

More Acidic

Neutral

More Alkaline

Each whole number increase on the pH scale indicates an increase of magnitude of 10.

Not 10 times more powerful.

The need for such a wide range of pH cleaners, may at this stage be obscure, so let us explain a little further. Most of our cleaning chemicals have a pH above 7.0. eg. all Activ Products. The reason for this is most soilage we encounter is made up of dirt, oils and greases. This type of soilage is almost always of an acidic nature. To break up material of an acidic nature, you attack it with an alkali to encourage a reaction. Acidic cleaners are generally specialised cleaners and have a narrow scope of use for a particular product. eg Toilet cleaners.



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Neutral cleaners are designed for sensitive, impervious areas, light duty cleaning, surface dirt or where prolonged skin contact may occur. eg. G.P. Detergent "Tops" - Hand Dishwashing, Versadet - Removal of surface dirt from relatively impervious finishes.

Water will break up plain dirt, but to break oils or greases you need more than water. Some cleaners use kerosene, mineral spirits, alcohol or aromatic solvents (toluene, xylene etc.) These certainly dissolve oils and greases but can have dangerous side affects.

Many solvents have limitations such as flammability, toxicity, vapours etc, and like highly acidic or alkaline materials should be used with care and caution and the appropriate protective equipment worn.

Peerless have attempted to eliminate solvent cleaners, and replace them with the "Patented Technology" of the Activ Range. These products are designed from synthetic (man made) chemicals and closely resemble the emulsification properties of solvents.

Being water based and solvent free they are safer to handle, use and store, and have the added economical advantage of being water dilutable.

Detergents are wetting agents, chemicals added to water to make it wetter. If you place droplets of water on a hard surface the drops of water have a beading effect, known as Surface Tension, which is an inward force around the outside of the water which attracts it to itself or hold it together. By adding a detergent you breakdown this surface tension and allow the water to disperse across the surface, or makes the water wetter.

By adding a detergent, the surface tension is decreased and the water spreads out. This illustrates how you can wet a surface better chemically than you can mechanically, ie. By moving water around on a surface with a sponge or brush.

DETERGENT TYPES

Soaps are anionic detergents. Anionic detergents are relatively low cost, do a fair cleaning but tend to leave a scum (soap scum) or powdery residue, especially when used with hard water. All the first cleaning chemicals were based on anionic detergents. Today, apart from personal hand soaps etc, they have a limited use.

Non-ionics are synthetic (man made surfactants) and although higher in cost than anionics are better cleaners, more tolerant to hard water and have a much broader range of characteristics. eg. Low and high foaming, use in water emulsions and oil emulsions etc. Non-ionics are used in almost all of our cleaning products.

Cationic detergents have poor detergency properties and as such are not used for their cleaning properties. They do however have excellent antistatic properties, and is the only group of surfactants that exhibit worthwhile bactericidal properties. Quaternary Ammonium Chloride Compounds (Quats) are cationic detergents. Cationics in our range include the Accents, Screen and Future.

Most floor surfaces are covered in small holes, we seal the floor surfaces to make cleaning easier. But continual traffic on the floor still scratches and marks the surface and allows dirt in. Water alone has trouble removing this dirt, without the right chemical it is still less than effective.

By adding detergents to the water we are able to get under the dirt and lift it out.

Peerless cleaners all have these aids for penetration and are able to get under dirt and soilage and hold it in suspension until it can be picked up and rinsed away. Some cleaning chemicals also contain agents to try and suspend this soil and this is where most chemicals stop, unless they contain petroleum or other solvent to hold the oily soilage.



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Peerless POSITIVE EMULSION CLEANERS activate dirt and oily soil into a POSITIVE EMULSION with your cleaning water - an emulsion so strong the soil can't settle out before the job is finished.

Costly, smelly, toxic solvents need never be used.

POSITIVE EMULSION CLEANING is more effective -



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DISINFECTANTS

Although disinfectants could be put down as a separate entity, they are in fact cleaners as well.

It should be noted that Disinfection and Sterilization are not the same thing.

Sterilization is a process that rids an article of all living organisms. This is normally performed with dry heat (150 - 180 degrees C) (autoclaving), ethylene oxide or ionizing radiation.

Disinfection is performed using chemicals. The most common are Quaternary Ammonium Chlorides, Phenolics or Chlorine releasing agents, although there are quite a few more.

Disinfecting only kills disease producing (pathogenic) organisms.

Quaternaries are the most commonly used disinfectants in the Western World where Tuberculosis is not a problem (Quats are ineffective against TB) because of their broad spectrum use, ease of manufacture and cost. Our Accents, Screen and Future are all Quaternary based.

For a product to be termed a disinfectant in Australia it must conform to a Therapeutics Goods Act (TGA) test.

Staphylococcus Aureus (Golden Staph)
Escherichia
Pseudomonas Aeruginosa
Proteus Vulgaris

These organisms are used because they are believed to be representative of all the different types likely to be encountered.

The tests in ease of passing are listed below.

Antiseptic
Hospital Grade Clean Conditions
Commercial Grade
Hospital Grade Dirty Conditions

The difference in the tests relates to the number of organisms present in the test and the medium in which they are tested.

TGA tests are reproducible to 99%, giving almost guaranteed performance to claims. Previous tests were not.



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