

Degreaser Comparison Analysis

In comparing products it's important to understand the various component features relating to each chemistry. No one degreaser is the same and formulations use different ingredients dependent upon their application. As global environmental pressures continue to dominate the agenda, industry requires safer components. The reduction in the use of VOC's in cleaner degreasers combined with interest in plant based surfactants are driving industry to rethink the use of high alkali degreasers that contain VOC's. The table below shows where EcoChemPro fits in relation to other industrial degreasers.



Degreaser Comparison Analysis										
	EcoChemPro	Simple Green	Speedex	Talon	I-95	Purple Power	Krud Kutter	ZEP EZ Clean	Greased Lightning	STRIDE
pH	7.2	8.5-9.5	12-13	12-14	12	12.5	12.2	12.5	12.5	7-8
Solvent / butyl	no	no	yes	no	yes	yes	yes	yes	yes	yes
Caustic / corrosive	no	no	yes	yes	yes	yes	yes	yes	yes	no
Biodegradability	100%	100%	<100%	<100%	<100%	<100%	<100%	<100%	<100%	<100%
VOC's	no	no	yes	yes	yes	yes	yes	yes	yes	yes
USES & APPLICATIONS										
Metals	✓	✓	✓	✓	✗	✗	✗	✗	✗	Floor Cleaner Only
Plastics	✓	✓	✓	✓	✗	✗	✗	✗	✗	
Wood	✓	✗	✗	✗	✗	✗	✗	✗	✗	
Rubber	✓	✗	✓	✓	✗	-	-	-	-	
Painted Surfaces	✓	✗	✗	✗	✗	✗	✗	✗	✗	
Carpet	✓	✗	✗	✗	✗	✗	✗	✗	✗	
Concrete	✓	✓	✓	✓	✓	✓	✓	✓	✓	
All hard surfaces	✓	✗	✗	✗	✗	✗	✗	✗	✗	✗
Dyes / Colors	no	yes	yes	yes	yes	yes	yes	yes	yes	yes
Fragrances	no	yes	yes	yes	yes	yes	yes	yes	yes	yes

* Pricing is based on 55 gal drum - online prices shown where possible.

pH - The Potential of Hydrogen

The pH scale is logarithmic and inversely indicates the concentration of hydrogen ions in a solution. Water (H₂O) is measured as 7.0. In simple terms Acids are measured from 1-6 and Alkalis 8-14. As the scale is logarithmic the strength of a product increases greatly as you move further away from 7.0.

EcoChemPro is pH 7.2. It represents a new generation of cleaner degreaser that is safe to use, that does not burn and that requires little PPE to use safely. In particular the use of Hazmat suits is removed when using EcoChemPro.



Chemical Burn from an Alkali Degreaser pH 13

Solvent / Butyl's

Butyl is a water soluble compound found in many degreasing products. It is derived from Butane and has excellent penetrating qualities used for degreasing and cleaning oils, dirt and grime. Unfortunately butyl's are linked with poor human health, kidney disease and can affect the human reproductive system.

Solvents are commonly used in degreasing including components such as alcohols, trichloroethylene, methylene chloride and n-propyl bromide. These organic compounds often have higher flashpoints making them flammable and they also have an adverse effect on air quality. Some degreasers containing solvents and butyl's are banned from use in U.S. States such as California. (see <https://ww2.arb.ca.gov/resources/california-ambient-air-quality-standards>)

As industry looks to reduce the amount of butyl and solvents there are credible alternatives such as Propanediol, a plant-derived, renewable resource alternative to Propylene Glycol and complies with many international standards.



Caustic / Corrosive Properties

Many cleaner degreaser chemistries include Caustic as a base ingredient. Caustic, also called Sodium Hydroxide, and is widely used across the world in a number of products including soaps, cleaners, candles and bio-fuels.

Caustic has very good cleaning properties, however it is both harmful to health, causing respiratory problems, dermatitis and even severe burns.



It is also corrosive to metals - particularly Aluminium, Zinc, Tin and Beryllium. In addition Caustic products can, over time, erode seals, gaskets, bearings and internal workings of machines, pumps and motors. The high cost of maintenance should be a factor when considering suitable cleaner degreasers for working environments.



EcoChemPro does not contain any caustic elements. Using EcoChemPro to clean and degrease will not degrade equipment components therefore reducing maintenance costs for our clients.

Biodegradability

EcoChemPro is 100% biodegradable. All of the components within the chemistry will break down naturally over time. Products containing solvents, butyl's and other toxins will not breakdown as effectively and some are harmful very to the environment. Industry that routinely uses heavy acidic or alkali products have to treat their water prior to discharge to municipal water authorities. EcoChemPro is the safer alternative.



VOC's - Volatile Organic Compounds.

According to the U.S. Environment Protection Agency "Volatile organic compounds (VOCs) are emitted as gases from certain solids or liquids. VOCs include a variety of chemicals, some of which may have short- and long-term adverse health effects. Concentrations of many VOCs are consistently higher indoors (up to ten times higher) than outdoors. VOCs are emitted by a wide array of products numbering in the thousands. Examples include: paints and lacquers, paint strippers, cleaning supplies, pesticides, building materials and furnishings, office equipment such as copiers and printers, correction fluids and carbonless copy paper, graphics and craft materials including glues and adhesives, permanent markers, and photographic solutions."



Health effects may include:

Eye, nose and throat irritation
Headaches, loss of coordination and nausea
Damage to liver, kidney and central nervous system
Some organics can cause cancer in animals, some are suspected or known to cause cancer in humans.



Key signs or symptoms associated with exposure to VOCs include:

conjunctival irritation, nose and throat discomfort, headache
dyspnea, declines in serum cholinesterase levels, nausea, emesis
epistaxis, fatigue, dizziness, allergic skin reaction

U.S. States are beginning to impose restrictions on VOC limits to improve air quality and reduce harmful health effects. The last 12 months has seen a number of regulatory changes in relation to VOCs. U.S. State level VOC limits have changed in Maryland and Connecticut and the California Clean Air Act requires businesses to limit the levels of VOC's in the workplace.

More U.S. Industries are looking to drastically lower or remove VOC's from the workplace - especially in cleaner degreasers. Paper & Pulp industries are actively looking to remove VOC's in cleaner degreasers and other industries are following their lead.

EcoChemPro contains no VOC's. Our unique proprietary chemistry works effectively without VOC's and gives businesses a safer, non-hazardous formula for cleaning and degreasing. As a pH neutral product it is safe to use and requires little P.P.E.. It's non-caustic formula means it will not degrade equipment and is soft on metals too.