

Chapter 38[©]



**Safe Solutions, Inc. Enzyme Cleaners
with and without Peppermint,
Safe Solutions Food-Grade DE and
Safe Solutions Not Nice to Bugs[®]
and some other Pestisafes[®] and Cleaners and
Helpful Hints we have developed and/or field tested.**

“Concern for man himself and his fate must always be the chief interest of all technical endeavors...in order that the creations of our mind shall be a blessing and not a curse to mankind.” — Albert Einstein

This is what Dr. Ann McCampbell found for the health effects of the following commonly used antimicrobial agents:

DISINFECTANTS/SANITIZERS

ISOPROPYL ALCOHOL – increased risk of nasal cancer in workers involved in its manufacture, probably neurotoxic like other solvents; overexposure can cause headache, drowsiness, loss of coordination, unconsciousness and death, repeated skin exposure can cause rash; long-term effects can occur from repeated exposures to levels not high enough to make one immediately sick. (NJ Dept. of Health and Senior Services Hazardous Substance Fact Sheet)

Is a central nervous system depressant and can cause dizziness, giddiness, headache, decreased pulse and blood pressure, vomiting and collapse; experimental reproductive effects including birth defects; suspected toxicant to virtually all organ systems. (Cleaning for Health)

Suspected cardiovascular/blood, gastrointestinal/liver, kidney, respiratory, neuro and skin toxicant. (Environmental Defense Scorecard Chemical Profile)

PHENOL – causes cancer in animals as well as low birth weight offspring and birth defects (ATSDR public health statement). Is a persistent bioaccumulative toxin (PBT). Can irritate and burn skin, eyes, nose, throat and lungs. High or repeated exposure may damage liver, kidneys and heart. Causes mutations and thus may contribute to cancer risk. (Cleaning for Health)

I think most Lysol products contain alcohol, phenol, or both (although a few may contain quat ammonium).

CHLORINE (SODIUM HYPOCHLORITE) – can cause corrosive eye, skin, nail and membrane damage and/or irritate the lungs; very dangerous if swallowed; may damage the nervous system (yet this is one of the least toxic options!!) (Cleaning for Health)

HYDROGEN PEROXIDE AND PERACETIC ACID (stronger than H₂O₂) – can burn eyes, skin, nose, throat and lungs; high levels can cause pulmonary edema; peracetic acid can damage liver and kidneys; hydrogen peroxide is mutagenic which could cause cancer, birth defects or miscarriages (and this is one of the safer products). (Cleaning for Health)

QUATERNARY AMMONIUM COMPOUNDS (includes benzalkonium chloride, Zephiran) – can cause irritation to skin, eyes, nose and throat, possible allergic responses and occupational asthma with chronic use; suspected neurological, gastrointestinal and liver toxicant (and this is also one of the better choices). (Cleaning for Health)

IODINE – possible endocrine system disrupter; can cause severe skin irritation, burns and allergy; breathing vapors can cause shortness of breath and pulmonary edema; can also damage the liver; repeated exposures can cause diarrhea and headache. (Cleaning for Health)

STERILANTS

ETHYLENE OXIDE (gas) – central nervous system depression, eye irritation, adverse reproductive effects (e.g., increased miscarriages); probably human carcinogen (increased leukemia, stomach and pancreatic cancer). (EPA Office of Air Quality Planning & Standards fact sheet)

GLUTARALDEHYDE (liquid) – so toxic must only be used under a ventilation hood (Cleaning for Health); known sensitizer (doctor friend got workers' comp based on developing aldehyde sensitivity from working at health facility where glutaraldehyde was used in poorly ventilated areas).

FORMALDEHYDE (liquid, gas dissolved in water) – eye, nose and throat irritation and respiratory symptoms, menstrual disorders and pregnancy problems; probably human carcinogen (increased lung and nasopharyngeal cancers). (EPA Office of Air Quality Planning & Standards fact sheet)

Inexpensive, Bio-degradable and Non-Toxic Cleaners, Medicines and/or Tools

The following cleaners are considered to be non-toxic (if you do not ingest them) and will save you money. All purpose non-toxic cleaners prepared from natural ingredients are friendly to the environment - and to you.

Detergents, drain openers and other cleaners can contain caustic compounds, chlorine bleach, ammonia or other strong synthetic chemicals can create fumes that irritate eyes and lungs - So why pay a lot of money to poison yourself and/or the environment?

White vinegar and lemon juice cut grease. Baking soda cleans and deodorizes, softens water and boosts the cleaning power of soap. Washing soda disinfects, cuts grease and removes stains. Safe Solutions, Inc. Enzyme Cleaner also can be used to remove stains and odors, open drains, disinfect, cut grease, clean septic tanks and drain lines, remove mildew and mold, clean windows and floors and many other jobs. Borax is a naturally occurring mineral that removes stains, inhibits mold, softens water, cleans, deodorizes, disinfects and also kills insects.

Use natural soaps that have a vegetable oil base such as Murphy's Oil Soap. Natural soaps are available in the cleaning section of most supermarkets. So are washing soda, baking soda and Borax. Safe Solutions, Inc. Enzyme Cleaner with or without Peppermint truly is an all purpose product and is available from Safe Solutions, Inc. at 1-888-443-8738, <http://www.safesolutionsinc.com>. Safe Solutions, Inc. also has a concentrated enzyme cleaner in powdered form and a liquid castile peppermint soap (with or without enzymes).

Alka-Seltzer:

Cure urinary tract infections; drop 2 tablets in a glass of water and drink it at the onset of symptoms.

Clean a toilet: Drop in 2 Alka-Seltzer tablets, wait 20 minutes, brush and flush. The citric acid and effervescent action clean vitreous china.

Clean a vase: To remove a stain from the bottom of a glass vase or cruet, fill with water and drop in 2 Alka-Seltzer tablets.

Polish jewelry; Drop 2 Alka-Seltzer tablets into a glass of water and immerse the jewelry for 2 minutes.

Clean a thermos bottle: fill the bottle with water, drop in 4 Alka-Seltzer tablets and let soak for an hour (or longer, if necessary).

Unclog a drain: Clear the sink drain by dropping 3 Alka-Seltzer tablets down the drain followed by a cup of Heinz white vinegar. Wait a few minutes, then run the hot water.

All purpose cleaner:

Mix 1 teaspoon liquid soap, 1 - 2 tsp. borax and 1 tsp. white vinegar or lemon juice or washing soda in 1 quart water (or simply use 1 oz. Safe Solutions, Inc. Enzyme Cleaner or 1 oz. of their peppermint soap). Store and use in a spray bottle.

All purpose spray cleaner:

Mix ¼ c. borax, ¼ c. vinegar, 1 T. castile soap. Dilute in 2 gals. hot water. Add 20 - 30 drops of pine, peppermint, lemon, orange or lavender oil; not only cleans but quickly kills insect pests. Be careful around plants as this mix can harm them.

Take baby powder to the beach:

Keep a small bottle of talcum/baby powder in your beach bag. When you're ready to leave the beach sprinkle yourself and your children with the powder and the sand will slide right off your skin.

Liquid scrub cleaner:

Mix 3 T. baking soda, 1½ T. ground herbs (lavender, peppermint, rosemary, etc.), 1½ T. castile soap and 1½ T. water. Put mix in applicator bottle so you can shake and use when you need it.

Looking for Quick Root Growth? Take ¼ c. honey and ¾ c. boiling water; combine the boiling water and honey in a jar, mix and then let cool. Place cuttings in this cooled solution for 2 days and plant in potting soil. The Author has found water with ½ oz. Safe Solutions #2 Enzyme Cleaner per 1 gal. water also increased root growth.

Decks, shower and kitchen areas:

Mop and scrub with 2 oz. Safe Solutions, Inc. Enzyme Cleaners per 1 gal. water.

Roof Ice Dams:

Put salt in a nylon stocking and tie the end. Place the stocking wherever you want to remove the dams on the roof.

Silver cleaner:

To brighten dull silver, soak in potato water or rub with a piece of potato dipped in baking soda.

Sore throat:

Mix ¼ c. vinegar with ¼ c. honey and take a teaspoon 6 times a day; the vinegar kills the bacteria.

Splinter removal:

Pour a drop of Elmer's Glue all over the splinter, let dry and then peel the dry glue and splinter off the skin. Put Scotch tape over the splinter, then pull it off; most splinters come out easily and painlessly.

Too much salt?

If you accidentally over-salt a dish while it's still cooking, drop in a peeled potato; it absorbs the excess salt for an instant "fix-me-up."

Reopening envelopes:

If you seal an envelope and then realize you forgot to include something inside, just place your sealed envelope in the freezer for an hour or two. Voila! It unseals easily.

Wood and furniture polish:

1. 1 qt. water and 2 T. vinegar and 2 T. good cooking oil, or 1 pint mineral oil with a few drops of lemon juice. Wash furniture off with a rag saturated with the polish; then wipe dry with a soft rag.
2. ¾ c. olive oil, ¼ c. vinegar and ¼ tsp. lemon oil. Wash furniture with vinegar and water first; then apply mix and polish with a dusting cloth.
3. Use Safe Solutions, Inc. Castille Soap Products with and/or without the enzyme.

Stove cleaner:

Spray heavily with 3 - 4 oz. Safe Solutions, Inc. Enzyme Cleaners per qt. water; scrub with bristle brush until clean.

Grease spot remover:

Grease spots can be removed from most fabrics by a salt solution of mild to medium strength spread the fabric

Dishwasher soap:

Use equal parts of borax and washing soda (or 1 capful Safe Solutions, Inc. Enzyme Cleaner with Peppermint).

Disinfectant:

Colloidal silver on a sterile cotton ball. Use ½ c. borax in 1 gal. hot water (to inhibit mold and mildew, do not rinse off borax solution) or use Safe Solutions, Inc. Enzyme Cleaner or spray lightly with 3% hydrogen peroxide and then mist with white vinegar. **Soaps and/or detergents by their very nature are meant to clean and thereby disinfect. Vinegar kills bacterial, mold and fungus problems. Sunshine is still the best disinfectant.**

Eliminate ear mites:

All it takes is a few drops of Wesson corn oil in your cat's ear. Massage it in, then clean with a cotton ball. Repeat daily for 3 days. The oil soothes the cat's skin, smothers the mites and accelerates healing.

Scouring powder:

Combine borax, table salt or baking soda with soap or Safe Solutions, Inc. Enzyme Cleaners. Scrub with a firm bristle brush.

Window cleaner:

Put vinegar in a spray bottle, mist the windows, then wipe dry with a cloth or wash with 1 T. vinegar and 1 pint water (or ½ oz. Safe Solutions, Inc. Enzyme Cleaner per 1 gal. water). 3 parts vinegar and 1 part water will stop windows from frosting.

Mold:

Simply drying out moldy objects will kill the molds. Once everything is dry, it is only a matter of wiping down the moldy surfaces and then keeping the humidity under control. Treat with borax for permanent control.

Oven Cleaner:

Place ¼ c. of ammonia in a shallow, non-aluminum pan. Add enough water to cover bottom of pan. Heat oven for 20 minutes. Turn off and place pan in oven overnight. Baked-on foods will be loosened and ready to remove with the following mixture: 2 T. baking soda or borax in 1 gal. water. Scrub with fine steel wool. (Use gloves.)

Pie plate stain remover:

Soak pie plates in a strong solution of borax and water (or with 1 oz. Safe Solutions, Inc. Enzyme Cleaner)

Carpet cleaning:

2 oz. Safe Solutions, Inc. Enzyme Cleaners per 1 gal. water. (Prespot stains first.)

Deodorize carpets:

Mix 2 parts corn meal with 1 part borax. Sprinkle liberally. Leave one hour, then vacuum. This mix will also help control fleas and any pest that eats the corn meal.

Foggy windows:

Keep a chalkboard eraser in the glove box of your car; when the windows fog, rub them with the eraser. Works better than a cloth.

Drain cleaner:

1. Mix 1 c. baking soda, 1 c. salt, ¼ c. cream of tartar and pour down the drains. Pour a small amount of Safe Solutions, Inc. Enzyme Cleaners down the drain once a week.
2. Pour ¼ c. baking soda down the drain; then add ½ c. vinegar. Cover the drain until the fizzing stops. Rinse with lots of hot water (or routinely put 1 - 2 oz. enzyme cleaner down the drains to help open them, the septic tanks and drain fields). Use either procedure once a week to keep your drains flowing freely.

The advantage Safe Solutions, Inc. #2 Enzyme Cleaner has it contains many different enzymes to help actually digest materials in sewer lines, septic tanks and drain fields.

Other spot removers:

General: ¼ c. borax in 2 c, cold water - soak the stain prior to washing.
Blood: Pour 3% hydrogen peroxide solution directly on the stain, before rinsing with water. Wash.
Ink: Apply a paste of lemon juice and cream of tartar. Allow to dry; then wash.
Carpet stains: Repeatedly blot with vinegar and soapy water or diluted Safe Solutions Enzyme Cleaners.
Red Wine: Blot with white wine and warm soapy water.

Pest control: 1 oz. Safe Solutions, Inc. Enzyme Cleaner with Peppermint or less per 1 qt. water will quickly “clean away” most insects including carbamate, organophosphate, organochlorine and pyrethroid resistant pests. Use ½ oz. (or less) diluted enzyme cleaners per 1 gal. water in the garden. Stephen L. Tvedten has U. S. Patent No. 6,663,860 that basically covers the use of enzymes/surfactants (enzyme cleaners) to control pest problems.

Ectoparasite control: A few drops of diluted Safe Solutions, Inc. Enzyme Cleaner and/or their Pet Wash will safely remove ear mites in cats. Moisten some cotton swabs with the shampoo or cleaners and clean the ears daily for 3 days. Has your pet iguana or snake got parasites (e.g., ticks) under its scales? Bathe them in diluted Safe Solutions, Inc. Enzyme Cleaner (1 oz. per gal. water), then rinse. A diluted enzyme dilution of ½ oz. per 1 qt. water can be used to shampoo or lightly mist birds to help rid them of mites, bugs and/or lice. Be sure to use great care when bathing pets; even tap water can put some species into shock and/or kill them. Various diluted enzyme cleaner mixes also tends to heal sores and skin abrasions and mange skin conditions in addition to washing away ticks, fleas and flies. Screw worm larvae in sheep, etc.: Spray them daily with a liquid dilution until the condition improves. Try Not Nice to Skin Irritations.

Sting/bite/rash/fungus irritation: To control ringworm, athlete’s foot, jungle rot, etc. mix 1 oz. Safe Solutions, Inc. Enzyme Cleaner per 1 qt. water and spray on or soak some gauze and leave on. Repeat as needed. Try Not Nice to Skin Irritations.

To order Lice R Gone products and/or Safe Solutions, Inc. Enzyme Cleaners visit:

<http://www.safesolutionsinc.com> and/or <http://www.licergone.com> or call 1-616-677-2850 or 1-888-443-8738.

Cleaning notes: Clean on rainy days when the humidity tends to dampen the dust and make it easier to remove. Clean windows on cloudy days because sunshine causes the cleaner to dry too quickly and streak.

1. Baking soda has many cleaning and deodorizing uses.
2. Borax brightens, cleans, and kills mold, bacteria and plants.
3. Lemon juice cuts grease and polishes metal, lightens stains and brightens the laundry. To remove tarnish, rub sliced lemon sprinkled with baking soda on brass, copper, bronze and aluminum.
4. Washing soda is a stronger alternative to baking soda.
5. White distilled vinegar disinfects and deodorizes and dissolves hard water scale, gummy surfaces, tarnish and pulls dirt from wood.

“Teshuvah” - growth toward G-d, is a process of experimentation. “Failures” are as much a part of the process as “successes”.

on a flat surface and sponge the salt solution freely onto the stained area; then rub lightly with a dry, soft cloth. Repeat as necessary (or try spotting with Safe Solutions, Inc. Enzyme Cleaners - 2 oz.per 1 quart water.)

Shaving with hair conditioner:

Use your hair conditioner to shave your legs. It is a lot cheaper than shaving cream and leaves your legs really smooth. It is also a great way to use up the conditioner you bought but did not like when you tried it in your hair.

Fabric softener:

The cheapest and safest way to make clothes softer is to rinse them thoroughly.

Fungicide Alternatives:

Sulphur and calcium sulphate can replace all the synthetic fungicides and work on grey and powdery mildews. Start with baking soda mixed in water for mild infestations.

Herbicide Alternatives:

Herbicidal soaps, acetic acid, salt water, ammonia and 3% solutions of essential oils.

Mildew and fungus remover:

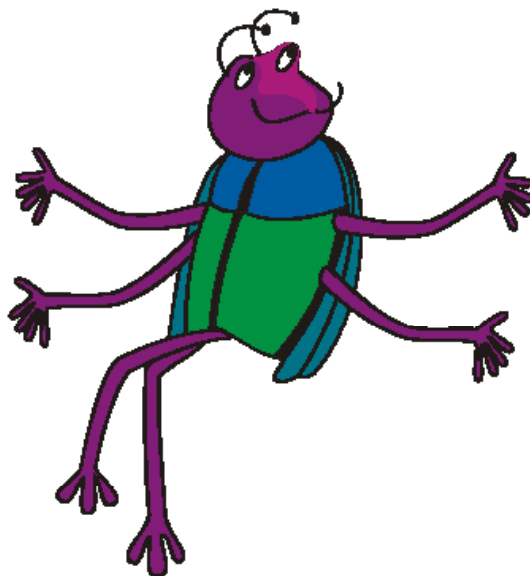
Spray with 2 oz. Safe Solutions, Inc. Enzyme Cleaner per 1 qt. water; if black and/or thick you may have to scrub the area with a broom or bristle brush. Repeat as needed.

Moths:

Use camphor. To trap moths, mix 1 part molasses with 2 parts vinegar and place it in a yellow container. Routinely clean with 1 oz. Safe Solutions, Inc. Enzyme Cleaner per 1 gal. water.

Blood stains:

Dampen the stain with cold water, then rub in salt or a small amount of Safe Solutions, Inc. Enzyme Cleaners with or without Peppermint. Let stand about one half hour, then rinse in cold water. Repeat if needed.



Ecdysis - From Wikipedia, the free encyclopedia

Ecdysis is the moulting of the cuticula in arthropods and related groups (Ecdysozoa). Since the cuticula of these animals is also the skeletal support of the body and is inelastic, it is shed during growth and a new, larger covering is formed. The old skin is called an exuvia.

After moulting, an arthropod is described as **teneral**; it is “fresh”, pale and soft-bodied. Within one or two hours, the cuticle hardens and darkens following a tanning process similar to that of the tanning of leather. It is during this short phase that the animal grows, since growth is otherwise constrained by the rigidity of the exoskeleton.

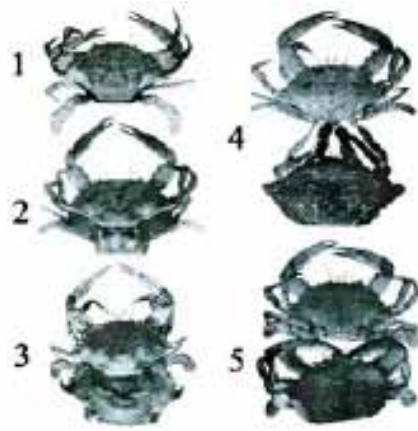
Ecdysis may also enable damaged tissue and missing limbs to be regenerated or substantially re-formed, although this may only be complete over a series of moults, the stump being a little larger with each moult until it is of normal, or near normal size again.

Process

In preparation for ecdysis, the arthropod becomes inactive for a period of time, undergoing apolysis (separation of the old exoskeleton from the underlying epidermal cells). For most organisms, the resting period is a stage of preparation during which the secretion of fluid from the moulting glands of the epidermal layer and the loosening of the underpart of the cuticula occur.

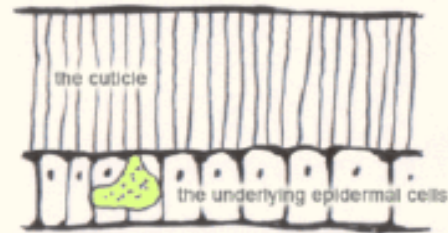
Once the old cuticle has separated from the epidermis, the digesting fluid is secreted into the space in between them. However, this fluid remains inactive until the upper part of the new cuticula has been formed.

While the old cuticula is being digested, the new layer is secreted. All cuticular structures are shed at ecdysis, including the inner parts of the exoskeleton, which includes terminal linings of the alimentary tract and of the tracheae if they are present.



Series of pictures showing the progression of ecdysis in *Callinectes sapidus*,

The process of moulting in insects begins with the separation of the cuticle from the underlying epidermal cells



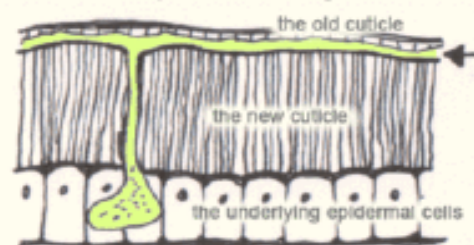
the hormone ecdysone

After the separation, moulting fluid is secreted into the space between the old cuticle and the epidermis (the exuvial space), this contains inactive enzymes which are activated only after the new epicuticle is secreted.



the hormone ecdysone

The lower regions of the old cuticle are then digested by the enzymes and subsequently absorbed. The process of moulting can start.



the hormone ecdysone

Then, by crawling movements, the animal pushes forward in the old integumentary shell, which splits down the back allowing the animal to emerge. Often, this initial crack is caused by an increase in blood pressure within the body (in combination with movement), forcing an expansion across its exoskeleton, leading to an eventual crack that allows for certain organisms such as spiders to extricate themselves.

Moulting in insects

A Luna moth caterpillar just after ecdysis. The old exoskeleton is visible behind it. Each stage in the development of an insect between moults is called an instar, or stadium. Higher insects tend to have fewer instars (4-5) than lower insects (anywhere up to ~15). Higher insects have more alternatives to moulting, such as expansion of the cuticle and collapse of air sacs to allow growth of internal organs.

The process of moulting in insects begins with the separation of the cuticle from the underlying epidermal cells (apolysis) and ends with the shedding of the old cuticle (ecdysis). In many of them it is initiated by an increase in the hormone ecdysone. This hormone causes:

- ❖ apolysis - the separation of the cuticle from the epidermis
- ❖ excretion of new cuticle beneath the old
- ❖ degradation of the old cuticle

After apolysis, moulting fluid is secreted into the space between the old cuticle and the epidermis (the exuvial space), this contains inactive enzymes which are activated only after the new epicuticle is secreted. This prevents them from digesting the new procuticle as it is laid down. The lower regions of the old cuticle - the endocuticle and mesocuticle - are then digested by the enzymes and subsequently absorbed. The exocuticle and epicuticle resist digestion and are hence shed at ecdysis.



A cicada moulting



A Luna moth caterpillar just after ecdysis.
The old exoskeleton is visible behind it

UNDERSTANDING SAFE SOLUTIONS, INC. #2 or KLEEN KILL® ENZYME CLEANERS

Enzymes are highly specialized proteins that are classified by the type of reaction they catalyze. In the human digestive tract we have proteases, carbohydrases and lipases that break down proteins, carbohydrates and fats into smaller substances that can be absorbed into the blood stream. Enzymes are produced by living organisms themselves. Commercial enzymes are produced from the fermentation of specially selected, non-pathogenic, non-toxic strains of microorganisms, or extracted and purified from plant or animal sources. When handling enzyme concentrates, care should be taken to avoid skin contact and the inhalation of vapors/aerosols. **The Author believes that protease enzymes can cause eye and skin irritation and believes, used in concentrations greater than 1% protease, they can cause anaphylactic shock and/or occupational asthma.**

Enzyme cleaners are simply “digesters” that work by eating (digesting) protein matter in organic soil or waste. Enzyme cleaners are especially effective in controlling odors caused by a buildup of organic soils in rest rooms, plumbing, carpets, counters, drains, mattresses, furniture and floors.

Enzymes are complex proteins naturally created by living organisms such as yeast, bacteria, people, pets, spiders, scorpions, insects, plants, and animals and are used to open and exit exoskeletons, create venom, digest food, waste and other materials.

To understand how any cleaning product works, we must first understand what dirt is comprised of. Dirt is actually layers of fine films made up of greases, oils, fats, bacteria, germs, dust mites, nonorganic material and organic micro-organisms. These films are bonded to each other and to the surface by amino and fatty acids.

Most cleaners emulsify some of these films but do not break down amino and fatty acids. Usually the top layers of the films are removed but some of the base layers are left to collect bacteria and, in turn, re-soil much faster.

Enzymes attack or digest the amino and fatty acids that bond the films of dirt together and emulsifies them so they can be transferred completely off the surface, WHICH DETERGENTS CANNOT DO BY THEMSELVES.

In other words enzymes are catalysts that accelerate the natural biodegrading or breaking down of organic substrate which, as we said, comprises most soils.

Safe Solutions protease enzymes are derived from living organisms and (at 1% or less of the formulation) are normally harmless to humans, animals and marine life, or most of our ecology. They perform their catalytic function on contact. Safe Solutions protease enzymes are non-toxic, non-irritating, non-gaseous, non-flammable, non-pathogenic and completely safe to use. **We do not know the percentage of protease in preformed enzymes.**

To put it another way, Safe Solutions protease enzymes are manufactured proteins that already exist in organisms such as plants, animals and bacteria and are used to digest waste.

When added to organic material, such as dirt, grease and oil, Safe Solutions, Inc. surfactants and protease enzymes immediately go to work breaking down the organic material. It's this natural “Dust to Dust” process that constantly occurs in our environment and keeps waste material from over running us.

There are thousands of different enzymes, each having specific, individual characteristics. For example, a protease enzyme that causes proteins to break down will not react on fats and/or oils. Therefore, an effective enzymatic cleaning system must contain enough different kinds, classes and types of enzymes and surfactants to assure proper catalytic reaction, which in concentrated form greatly speeds up the natural “Dust to Dust” process.

SLT has created several EPA exempt safe pesticides, e.g., Safe Solutions, Inc. Pet Wash, Insect Repellent and Not Nice to Bugs insecticide. All are highly effective and are made of only GRAS and/or food-grade ingredients.

Then, by crawling movements, the animal pushes forward in the old integumentary shell, which splits down the back allowing the animal to emerge. Often, this initial crack is caused by an increase in blood pressure within the body (in combination with movement), forcing an expansion across its exoskeleton, leading to an eventual crack that allows for certain organisms such as spiders to extricate themselves.

There are FOUR BASIC ENZYMATIC SYSTEMS:

1. THOSE THAT BREAK DOWN FATS AND GREASES (LIPASE).
2. THOSE THAT BREAK DOWN PROTEINS (PROTEASE).
3. THOSE THAT BREAK DOWN CELLULOSE, SUCH AS WOOD, COTTON, PAPER (CELLULASE).
4. THOSE THAT BREAK DOWN CARBOHYDRATES AND STARCHES (AMYLASE).

These four types can be used or you can simply use protease and several quality surfactants as has been done in Safe Solutions, Inc. enzyme cleaning products.

When activated, the various enzymes and/or surfactants begin to digest the amino and fatty acids that bond these films of dirt together. They also emulsify them so they can be completely removed from the surface. A catalyst is any substance that speeds or slows a chemical reaction without being directly involved in the reaction itself. Enzymes are chemical catalysts that accelerate the natural biodegrading, or breaking down, of organic substrates which comprise most dirt. Enzymes dissolve and break down (eat) protein and organic matter destroying dirt, stains and odors caused by such agents such as sewage, urine, feces, vomit, pet odors, spoiled foods and mildew. In the process they also inadvertently destroy insects, arachnids, molds, mildew, fungus, bacteria and viruses. They are not sold as pesticide poisons however, and are not currently registered.

Safe Solutions, Inc. surfactants and protease enzymes actually out perform germicidal cleaners because they digest the host material where germs and odor causing bacteria live and reproduce, thus eliminating the source and the bacteria. Germicidal cleaners kill bacteria but because they don't eliminate the host material, new bacteria can reproduce very soon after the germicidal cleaner has been applied or they can become resistant.

Safe Solutions, Inc. surfactants and protease enzymes are effective in cleaning and deodorizing bathrooms, kitchens, floors, walls, furniture, carpet just about any type of surface. Use 120° F. water for best results.

Note: Because of all these enzyme combinations, the pH of this cleaner has to be very acidic in order to keep the bacteria from starting up again, and no oils, fragrances or colors can be incorporated into the formula/product or it will turn. That is why the Author no longer normally recommends it.

Remember, all enzymes are specific, which means that one class, kind or type of system can work on only one type of material. For example, protease will break down complex proteins into smaller pieces.

Likewise, lipase enzymes will attach animal fats and grease, but will not work on wood or paper fibers such as toilet paper.

Enzymes that can be used to control insects and spiders are polysaccharidases, lipases, proteases and esterases, especially the enzymes protease, chitinase and collagenase. Patent No. 6,663,860

Enzymes, especially the enzymes that can be used to control fungus are polysaccharidases, lipases, proteases and esterases, especially the enzymes lysozyme, trypsins and proteases. Patent No. 6,663,860

Enzymes that can be used to control plants are polysaccharidases, lipases, proteases and esterases. Great control can be obtained when a polysaccharidase and a lipase, protease or esterase are used in combination. Especially the enzymes cellulase, B-glucanase and pectinase. Patent No. 6,663,860

You can view the patent at: http://www.safesolutionsinc.com/Tvedten_Biological_Pesticide_Patent.pdf

NON-TOXIC MOSQUITO CONTROL

Safe Solutions, Inc. Enzyme Cleaners are organic, enzymatic, bio-catalytic agents which have proven to be outstandingly effective to "clean away" mosquito larva and pupae control. Safe Solutions, Inc. enzyme cleaners alter the surface tension of water so that larvae and pupae have difficulty making contact with the air above the water surface film. Adult mosquitoes can not maintain surface contact on water treated with surfactants and protease enzymes. Late winter treatment of potential breeding water will preclude breeding. Other insects, as well as leaves, etc., do not remain on surface of water treated with enzymes and surfactants, but sink below the surface.

It is interesting to note that the pupal stage is the most quickly affected by protease enzymes and surfactants, whereas larvae tend to persist for longer periods both in field and laboratory experience. The opposite is found to be the case in the use of insecticide poisons, where the larval stage is the one most quickly killed. In stagnant water, large pounds, bird bathes, etc. you will note ultra-active response of the aquatic organisms upon initial addition of Safe Solutions, Inc. Enzyme Cleaners, as siphon tubes can no longer make contact with outside air. Safe Solutions surfactants and protease enzymes can last indefinitely in still or recirculated water. In many instances 100% control has been achieved. It is less effective and has less residual effect in moving water or in a pond with both inlets and outlets.

Odor Control: Safe Solutions Enzyme Cleaners with Peppermint are an extremely effective deodorizers of urine, skunk and other odors. Water treated with Safe Solutions, Inc. Enzyme Cleaners are harmless to fish life or animals and pets. It is non-irritant to the most sensitive skin tissue and, if accidentally taken internally, would produce only a mild laxative effect comparable to bland soaps.

Usually Safe Solutions Enzyme Cleaners contain no known allergens contributory to skin, respiration or other allergies and normally may be used in poorly ventilated areas. The product contains no combustible materials, is non-explosive, and may be used near open flame. Safe Solutions Enzyme Cleaners have approximately a one-year shelf life and will not evaporate, deteriorate or otherwise lose effectiveness when properly stored.

Drain openers. Pour some of the concentrate into clogged drains. Always start by working on lowest level floor drain first. If you start at the upper levels, the dislodged and dissolved protein will further plug the lower level plumbing. It is best to use either of Safe Solutions Enzyme Cleaners at night or over a weekend to give the enzymes several hours to do their job. Enzymes are not fast acting like acid-type drain openers and they require a few hours to work properly; however, they are much safer for you and your plumbing.

Carpets. Safe Solutions Enzyme Cleaners work very well for blood stain removal and they are very effective in reducing (or in most cases, eliminating) odors caused by urine, vomit, excrement and other organic-related odors. Enzymes can be used on all water-safe fabrics and carpeting. Safe Solutions Enzyme Cleaners may also digest natural dyes, so spot test a small area first. Safe Solutions Enzyme Cleaners will also "lift" some pesticides - so be careful of the rinse water.

Rest rooms. When mopping, mix Safe Solutions Enzyme Cleaners with Peppermint in warm water to the correct dilution ratio and mop floors. Do not rinse floors, but air dry, allowing the enzymes time to react with bacterial matter. Enzymes will be absorbed into the floor mortar joints, allowing deep odor removal. Remember that you cannot use an enzyme digester at the same time that a disinfectant cleaner is applied. The residue of the disinfectant will kill the live organisms of the enzymes. Use one or the other - never use both an enzyme digester and a disinfectant together. You can also spray diluted Safe Solutions, Inc. Enzyme Cleaners into the drains and onto or around urinals and other odor-producing fixtures. Regular applications of enzymes or Safe Solutions Probiotic Microbes, e.g., Not Nice to Odors, will eliminate the source of the odor. When spraying, use a stream, not a mist. Enzymes applied as a mist can easily be inhaled into the lungs. Bacterial enzyme cleaners are living organisms and could especially cause medical problems if inhaled.

The list of uses can be expanded to include any and all problem areas that have stains and odors from protein or organic matter, that need to be cleaned or sanitized or deodorized.

Quality Assurance: The Manufacturer is responsible for performance of all quality control inspection and test requirements and guarantees the reliability of the product when used as directed. Not Nice to Bugs® is an excellent cleaner of porcelain; the Author's Wife uses it to remove stains and odors in the toilets.

The problem that the Author repeatedly found is that when anyone produces preformed enzyme cleaners with various enzymes that are fermented the batches can and do vary greatly. No manufacturer of preformed enzymes gives a certificate of analysis, or can accurately list all of the various components and in exactly what percentages that "currently" exist, so you just do not know what mix you are getting at any given time. The same man and a woman can have several children, but each child can be extremely different from his brothers and sisters. This is what the Author found out repeatedly. Some preformed batches of enzymes and surfactants "blew up" and/or "ate the plastic containers;" some spoiled and smelled bad and the amounts you needed to use could change dramatically. Preformed enzyme compositions are "normally stabilized" by lowering the pH to 3.5; this is very acidic and often

burns the eyes and skin. That is why the Author now only advises the use of Safe Solutions, Inc. Enzyme Cleaners with or without peppermint that are made one enzyme at a time and each component is carefully added and, therefore, each formula is exactly the same each time you use it. The Author has found these new enzyme cleaners are at least 4 times as effective a cleaner and/or pest control alternative than the original preformed enzyme cleaners were/are. Merle Gardiner of Trans-Chemco in Bristol, WI makes the preformed enzymes for Neozyme and Great Lakes BioSystems and others; including such “previous” product names as Natures Best and Ginesis and Care Not Nice to Lice® and Lice Arrest™. John Battisoni of International Enzymes in Las Vegas, NV also makes preformed enzyme cleaners for several companies including such “previous” product names as Kleen Kill, Kleen ‘Em Away Naturally and Safe Solutions #2 products, Super C and Lice B Gone. The Author would like to note both sources are mentioned in his Patent No. 6,663,860, but the Author no longer recommends them.

Safe Solutions, Inc. Enzyme Concentrate can be applied as a spray or dripped into an inlet source; concentrates are instantly soluble in water. Application should result on a final tank or pond solution of 1 part concentrate to 50,000 parts water. Dilution for application is best made at a rate of 1 part concentrate to 4000 parts water, but stronger solutions may be used. **Be sure to check for any contraindications with fish and other marine life.**

Muck and Organic Sediment Removal: Safe Solutions, Inc. enzyme/bacteria mixes, especially when combined with Get Set’s lake, pond and sewage aeration systems (see <http://www.getipm.com>), really can digest algae, bottom debris, muck and other organic sediment, but should be applied at greater concentrations, e.g., 1 part concentrate to 25,000 parts water initially.

NOTE: Safe Solutions, Inc. Enzyme Cleaners are not currently registered for use as a pesticide by the EPA; the above information was obtained in field tests by the Author and other independent parties using Safe Solutions, Inc. Enzyme Cleaners and is listed for informational/educational purposes only - we can not legally advocate its use as a pesticide but only note its potential for use in mosquito control; when and/or if it is decided to register Safe Solutions, Inc. Enzyme Cleaners as pesticides rather than as cleaners and/or pestisafes®, this will be noted on the product; until then, we advocate its use, or that of Kleen ‘Em Away Naturally®, only as pestisafes® and/or cleaners.

“The world ‘discovery’ in itself is to be depreciated. For discovery is equivalent to becoming aware of a thing which is already formed; this links up with proof, which no longer bears the character of ‘discovery’, but in the last instance of the means that leads to discovery...Discovery is really not a creative act” — Albert Einstein

STORAGE

Freezing will not impair the Safe Solutions, Inc. Enzyme Cleaners’ effectiveness, but may cause rupture of the container. **Caution: Keep out of reach of children.**

Cleaning with Safe Solutions, Inc. Enzyme Cleaners Use Hot Water

1. **GLASS CLEANER** for windows, mirrors, bright metal and wall tile:
 - A. ½ ounce to 1 gallon of water
 - B. Pour into a trigger sprayer, spray and wipe clean.

Clean with 3M white pad or equivalent. No rinsing necessary.

2. **GENERAL CLEANING** for counter tops, desks, hard floors, spot cleaning for walls and tile, cleaning toilets, urinals and lockers:
 - A. 1 ounce to 1 gallon of water
 - B. 1 ounce to 15-ounce sprayer (heavy degreaser) for spotting

3. **DEODORIZATION** of airborne organic odor such as odors from urinals, toilet areas, locker areas, mildew and food odors:

- A. Use 1 ounce to 1 gallon of water
- B. (Pour into trigger sprayer and mist into air.
- C. Use up to 1 - 2 ounces per gallon of water in a humidifier in areas of high odor.

4. HIGH-SPEED BUFFING of floors and cleaning at the same time; excellent for maintaining floors between scrub outs:

- A. Use 1 ounce to 1 gallon water.
 - B. Pour into trigger sprayer.
 - C. Lightly mist floor ahead of buffer.
- We recommend the use of 3M red pad.

5. CARPET CLEANING Helps control dust mite allergens.

- A. **BONNET CLEANING:**
 - 1. Use 2 ounces per gallon of water
- B. **SHAMPOO AND WATER EXTRACTION**
 - 1. Use 2 ounces per gallon for light to medium soil.
 - 2. Use 3 ounces per gallon for heavy soil.

Note: Pre-spray all traffic areas. For spotting refer to 2B.

6. POOL DECKS, SHOWER ROOMS AND KITCHEN AREAS

- A. Mopping and scrubbing - Use 1 - 2 ounces per gallon of water.
- B. Gilmour Sprayer and Foamer - Use at 64 to 1 or 2 ounces per gallon of water.

7. ITCH REMOVAL A few drops in a good skin cream will stop itching.

Note: Preformed enzyme cleaners are only about 25% as effective as the new, e.g., Safe Solutions enzyme cleaners, so you can use ¼ of the listed amount if you use Safe Solutions Enzyme Cleaner with Peppermint.

Safe Solutions, Inc. #2 Preformed Enzyme Cleaners and/or Safe Solutions, Inc. Enzyme Cleaners and Peppermint Soap Products Safely "Clean Away" Pests

Note: Commencing on 12/16/03 Stephen L. Tvedten was given U. S. A. Patent No. 6,663,860 that patents the process of using enzymes/surfactants (enzyme cleaners) to control pest problems.

Enzyme cleaners are also extremely useful in safely "cleaning away" fungus, mold, mildew and insects. Simply spray a mix of 1 oz. (or less) per 1 qt. water and control any insect, fungus, mold and/or mildew problems you have. While enzyme cleaners are not EPA registered poisons, these non-toxic cleaners (to humans and pets) work better, quicker and safer than dangerous, synthetic pesticide poisons. Note: The new enzyme cleaners, e.g., Safe Solutions, Inc., only require 1 oz. per 1 qt. water; Kleen Kill, Kleen 'Em Away Naturally and/or Safe Solutions #2 enzyme cleaner require 4 oz. per 1 qt. water.

You can pour enzyme cleaner concentrate into a hose-end sprayer and spray your yard to safely control earwigs, ants, crickets, mosquitoes, grubs, ants and other pest problems. If you spray all visible pests, cracks and crevices and other hiding places with 1 oz. Safe Solutions, Inc. Enzyme Cleaner per 1 qt. water you will control all roaches, ants, spiders, crickets and silverfish in your home.

Spray yellow jacket, hornet and wasp nests at night with 1 oz. of Safe Solutions, Inc. Enzyme Cleaner with Peppermint per 1 qt. water to safely control these pests - if nests are in the ground - flood them with 3 - 5 gals. water with 1 oz. per gal. enzyme cleaner with peppermint per 1 gal. water.

Mold, mildew and fungus can also be sprayed (and brushed if necessary) with 1 oz. Safe Solutions, Inc. Enzyme Cleaner per 1 qt. water to control these problems without using dangerous fungicide poisons.

Most garden pests can be safely controlled with ½ oz. (or less) of Safe Solutions, Inc. Enzyme Cleaner per 1 qt. water. **(Always test a few leaves first!)**

Ant nests in the ground can be soaked with 1 - 2 oz. of Safe Solutions, Inc. Enzyme Cleaner with Peppermint per 1 gal. water (you may need to use 3 - 4 gals. hot water on large nests); put a hole in the nest to receive the mix. Mosquitoes can also be controlled after dusk by misting or spraying your area with 1 - 2 oz. Safe Solutions Enzyme Cleaner with Peppermint per 1 gal. water - an average yard needs about 1 gallon - larger yards require more.

Flies can be controlled by rinsing garbage cans and dumpsters with water when empty and then spraying them with 1 oz. Safe Solutions Enzyme Cleaner with or without 3 oz. 20-Mule Team® Borax per 1 qt. water.

Keep a quart sprayer filled with water and 1 oz. Safe Solutions, Inc. Enzyme Cleaner handy to spray flies, odors, ants, stains, mold, mildew, stinging insects, roaches and fungi.

Spiders: Safe Solutions Enzyme Cleaner with Peppermint and sodium borate can quickly kill spiders at a rate of only 1 - 2 oz. per qt. water in a spray bottle. Cockroaches do not live on borate treated wood.

Note: Safe Solutions, Inc. does not currently sell its enzyme cleaners as pesticides. The Author has written the U. S. E. P. A. and asked if these enzyme cleaners need to be registered as pesticides, but effective the date of this publication, he still has not heard from the U. S. E. P. A.

What Is Borax or Sodium Borate? Why Should I Be Careful?

Borax (also known as sodium borate decahydrate; sodium pyroborate; birax; sodium tetraborate decahydrate; sodium baborate) is a natural mineral compound ($\text{Na}_2\text{B}_4\text{O}_7 \cdot 10\text{H}_2\text{O}$). It was discovered over 4000 years ago. Borax is usually found deep within the ground, although it has been mined near the surface in Death Valley, California since the 1800s. Although it has numerous industrial uses, in the home borax is used as a natural laundry booster, multipurpose cleaner, fungicide, preservative, insecticide, herbicide, disinfectant, dessicant, and ingredient in making 'slime'. Borax crystals are odorless, whitish (can have various color impurities), and alkaline. Borax is not flammable and is not reactive. It can be mixed with most other cleaning agents, including chlorine bleach.

How Does Borax or Sodium Borate Clean?

Borax has many chemical properties that contribute to its cleaning power. Borax and other borates clean and bleach by converting some water molecules to hydrogen peroxide (H_2O_2). This reaction is more favorable in hotter water. The pH of borax is about 9.5, so it produces a basic solution in water, thereby increasing the effectiveness of bleach and other cleaners. In other chemical reactions, borax acts as a buffer, maintaining a stable pH needed to maintain cleansing chemical reactions. The boron, salt, and/or oxygen of boron inhibit the metabolic processes of many organisms. This characteristic allows borax to disinfect and kill unwanted pests. Borates bonds with other particles to keep ingredients dispersed evenly in a mixture, which maximizes the surface area of active particles to enhance cleaning power.

Risks Associated with Borax or Sodium Borate

Borax is natural, but that does not mean it is automatically safer for you or for 'the environment' than man-made chemicals. Although plants need boron, too much of it will kill them, so borax can be used as an herbicide. Borax may also be used to kill roaches, ants, and fleas. In fact, it is also toxic to people. Signs of chronic toxic exposure include red and peeling skin, seizures, and kidney failure. The estimated lethal dose (ingested) for adults is 15 - 20 grams (about 1/2 of an ounce or less); less than 5 grams (about 1/5 of an ounce) can kill a child or pet. (Note: 454 grams equals 1 pound.) For this reason, borax should not be used around food. More commonly, borax is associated with skin, eye, or respiratory irritation. It is also important to point out that exposure to borax may impair fertility or cause damage to an unborn child.

Now, none of these risks mean that you shouldn't use borax. If you do a bit of research, you will find risks associated with all cleaning products, natural or man-made. However, you do need to be aware of product risks so that you can use those products properly. **Don't use borax around food, keep it out of reach of children and pets, and make sure you rinse borax out of clothes and off of surfaces before use. Wash your hands before eating.**

Sodium borate repels/kills roaches, termites and all insects and arachnids.

THE IDEAL PESTICIDE

The 5th Edition of Truman's Scientific Guide to Pest Control Operations described "The Ideal Pesticide". "Ideally any pesticide will act rapidly on pests, yet be completely harmless to people, domestic animals, wildlife, and other aspects of the environment. Its residues would only last as long as was necessary to create the desired effect, usually for very short periods. It would also be inexpensive and readily available in necessary quantities, chemically stable (before application), non-flammable, and otherwise safe to use around homes or industrial sites. It would be easily prepared and applied, non-corrosive and non-staining, and it would have no undesirable odor. Unfortunately, no such (synthetic) pesticide exists." Purdue University and Advanstar Communications (Pest Control Magazine) worked on this 1997 Pest Control Manual, but they were, obviously, **still** unaware Stephen L. Tvedten had begun patenting in Australia, U.S.A. and Canada and using and field testing the ideal or perfect (pesticide) or Pestisafe® based on natural pest control. In addition to being on the (perfect or ideal pesticide poison descriptive) list, enzyme and surfactant products, e.g., Lice R Gone®, will never create any pest resistance problems and is truly the "perfect or ideal pesticide" as the entire compound contains only ingredients that are considered to be food-grade or non-toxic or GRAS (Generally Recognized as Safe) and all of these ingredients are active only as long as they are liquid and can be used virtually everywhere, even when people are sick, under 1, over 60, pregnant and/or chemically sensitive to control even pesticide-resistant pests. Most insects die in about 6 seconds; ticks take about 2 minutes to be safely and effectively destroyed. In addition this patented process of using enzymes and surfactants to control pest problems products can be diluted/applied in such a way that only the pest species are killed leaving the beneficial species alive! Part of the science behind the invention and/or patented process is that maggots produce enzymes to help soften up their food so they can eat it. Insectivore plants produce and also use protease enzymes to digest their insect prey. Spiders and scorpions produce and inject protease enzymes to predigest their prey and all molting insects produce a small amount of protease enzyme to serve as a chemical "zipper" so they can split open the back of their exoskeletons when they molt and emerge in order to increase their size. Without this protease enzyme all molting insects would be trapped inside their own exoskeletons and be crushed to death by their own growth. Therefore, there is no possibility that any insect or arachnid pest can ever develop a resistance to Stephen L. Tvedten's patented process with 77 claims of using enzymes/surfactants to control pest problems. Please note that Stephen already has a patent pending in the USA to increase the number of claims. Caution: The Ideal Pesticide can turn into a nightmare if not properly used/misused outside where it can destroy all beneficial insect/arachnid creatures.

How Enzymes/Bacteria Work Naturally to Destroy Algae and Muck

Bacteria/enzymes literally eat the "food" that algae live on and the enzymes/bacteria also eat muck. This effect can be accelerated with an aeration system.

Enzymes are the best digestive tools ever. It could be said that on the seventh day G-d created enzymes so He could rest. Enzymes are extremely powerful digestive tools. It would take us 100,000 years to digest a meal if we did not have enzymes in our digestive systems. With the enzymes, the entire process only takes 4 hours!

As stated previously, the Author used Super C, Kleen Kill, Kleen 'Em Away Naturally and/or several other preformed enzyme mixes and/or various other brews for many years, but was continually frustrated that he could not get a "standard" product or one that contain a different color, natural fragrance or natural or normal pH or even a known percentage of enzyme or certificate of analysis. That was why the Author now only recommends the more effective and standardized cleaning product that is being sold as Safe Solutions, Inc. Enzyme Cleaner with or without Peppermint and sodium borate. These new formulas are at least 4 times as effective as the old enzyme cleaners or pest control alternatives and are stable. The old cleaners varied greatly per batch; the new cleaners have a standard formula that assures you each ingredient is included in an exact percentage each time.

MATERIAL SAFETY DATA SHEET ENZYME CLEANER WITH PEPPERMINT

Safe Solutions, Inc. urges each customer or recipient of this MSDS to study it carefully to become aware of and understand the hazards associated with the product. The reader should consider consulting reference works or individuals that are experts in ventilation, toxicology and fire prevention, as necessary or appropriate to use and understand the data contained in this MSDS. Please read U. S. Patent No. 6,663,860.

To promote safe handling, each customer or recipient should: (1) notify its employees, agents, contractors and others whom it knows or believes will use this material or the information in this MSDS and any other information regarding hazards or safety; (2) furnish this same information to each of its customers for the product, and (3) request its customers to notify their employees, customers and other users of the product of this information.

SECTION 1 ♦ CHEMICAL PRODUCT & COMPANY IDENTIFICATION

Trade Name:	ENZYME CLEANER WITH PEPPERMINT
CAS Name:	Mixture
Product Description:	A concentrated solution of anionic / nonionic surfactant blend
Manufacturer's Name:	Safe Solutions, Inc.
Address:	2530 Hayes St., Marne, MI 49435-8781
Phone:	1-616-677-2850

NAME	CAS#	WT.%	TLV
Enzyme Cleaner with Peppermint is a proprietary composition NOT CONSIDERED HAZARDOUS under the OSHA Hazard Communication Standard CFR Title 29 1910.1200.			

SECTION 3 ♦ PHYSICAL AND CHEMICAL PROPERTIES

Vapor Pressure:	mm Hg) N/A
Vapor Density (air = 1)	(Air = 1) N/A
Specific Gravity:	H22° = 1) N/A
Solubility in Water:	Soluble
Volatile Organic Content:	Negligible
Appearance:	Amber liquid
Boiling Point:	N/A
Flash Point:	N/A
Freezing Point:	<32° F. (0° C.)
Odor:	Pleasant fragrance

SECTION 4 ♦ FIRE FIGHTING MEASURES

Flammable Properties:	Nonflammable
Flash point:	N/A
Flammable Limits:	Does not apply.
Hazardous Combustion:	None known.
Extinguishing Media:	Water fog or fine spray, carbon dioxide, dry chemical foam
Fire Fighting Instructions:	N/A

SECTION 5 ♦ HAZARDS IDENTIFICATION & FIRST AID MEASURES

HMS HAZARD RATINGS			
HEALTH - 0,1,2	FIRE - 0	REACTIVITY - 0	PERSONAL PROTECTION - See Section 8
Routes of Entry:	Product may enter the body via eye contact, skin contact and ingestion. See Section 8.		
Potential Health Effects:			
Eye:	Eye contact may cause irritation. Avoid eye contact with the product.		
Skin:	Skin contact may cause of irritation. In case of skin irritation, wash with soap and water and discontinue use.		
Ingestion:	Swallowing may cause irritation of mouth and throat. It may also cause nausea. Do not taste or swallow product.		
FIRST AID MEASURES			
Eye Contact:	If irritation is noted, IMMEDIATELY flush eyes with a directed stream of water for at least 15 minutes while forcibly holding eyelids apart to ensure complete irrigation of all eye and lid tissue. GET IMMEDIATE MEDICAL ATTENTION IF IRRITATION OCCURS.		
Skin Contact:	Flush skin with water and wash with soap and water. If clothing is penetrated, immediately remove clothing and flush skin with water. Wash clothes before reuse. GET PROMPT MEDICAL ATTENTION IF IRRITATION OCCURS.		
Ingestion:	Do not induce vomiting. If spontaneous vomiting is inevitable, PREVENT ASPIRATION by keeping victim's head below the knees. GET IMMEDIATE MEDICAL ATTENTION.		
Inhalation:	Remove to fresh air. If breathing is difficult, have trained person administer oxygen. If respiration stops, have trained person administer mouth-to-mouth resuscitation. GET MEDICAL ATTENTION IMMEDIATELY.		

SECTION 6 ♦ STABILITY AND REACTIVITY

Hazardous Polymerization:	Hazardous polymerization will not occur.
Materials to Avoid:	Avoid contact with strong oxidizing and reducing agents.
Conditions to Avoid:	See Section 7.
Hazardous Decomposition Products:	Not known. See Section 5.

SECTION 7 ♦ ACCIDENTAL RELEASE MEASURES

Large Spill:	Contain spill. Prevent runoff from entering drains, sewers or streams. Dispose in accordance with all applicable federal, state and local health and environmental regulations.
Spill:	Contain spill. Follow same procedure as above for large spill.

SECTION 8 ♦ EXPOSURE CONTROLS, PERSONAL PROTECTION

Personal Protection:	
Gloves:	Wear gloves if sensitive.
Safety Glasses:	Keep out of eyes. Safety glasses or similar protection can be used.

SECTION 9 ♦ HANDLING AND STORAGE

Storage Temperature:	Store this product below 120° F. (40° C.), preferably below 75° F. (24° F.), in a cool, dry, well ventilated area away from heat, sparks, flame, oxidizers and out of direct sunlight. For best results use within 12 months. Never co-mingle with bactericides or quaternary disinfectants, as they will degrade/inactivate enzymes.
General Precautions:	Keep container closed when handling or storage.

SECTION 10 ♦ OTHER INFORMATION

Disclaimer:	The information contained herein is based upon data available to use and reflects our best professional judgment. However, no warranty is expressed or implied regarding the accuracy of such information or the results obtained from the use thereof. We assume no legal responsibility whatsoever for any damage resulting from reliance upon this information since it is being furnished upon the condition that the person receiving it shall make his or her own determination of the suitability of the material described herein for a particular application or storage situation.
--------------------	--

MATERIAL SAFETY DATA SHEET

LICE R GONE® SHAMPOO

Safe Solutions, Inc. urges each customer or recipient of this MSDS to study it carefully to become aware of and understand the hazards associated with the product. The reader should consider consulting reference works or individuals that are experts in ventilation, toxicology and fire prevention, as necessary or appropriate to use and understand the data contained in this MSDS. Please read U. S. Patent No. 6,663,860.

To promote safe handling, each customer or recipient should: (1) notify its employees, agents, contractors and others whom it knows or believes will use this material or the information in this MSDS and any other information regarding hazards or safety; (2) furnish this same information to each of its customers for the product, and (3) request its customers to notify their employees, customers and other users of the product of this information.

SECTION 1 ◆ CHEMICAL PRODUCT & COMPANY IDENTIFICATION

Trade Name: LICE R GONE® SHAMPOO
CAS Name: Mixture
Product Description: A solution of anionic / nonionic surfactant blend with glycerin and protease
Manufacturer's Name: Safe Solutions, Inc.
Address: 2530 Hayes St., Marne, MI 49435-8781
Phone: 1-616-677-2850

NAME	CAS#	WT.%	TLV
Lice R Gone® Shampoo is a proprietary composition NOT CONSIDERED HAZARDOUS under the OSHA Hazard Communication Standard CFR Title 29 1910.1200. FDA GRAS List, Parts 175, 182 & 184			

SECTION 3 ◆ PHYSICAL AND CHEMICAL PROPERTIES

Vapor Pressure: mm Hg) N/A
Vapor Density (air = 1) (Air = 1) N/A
Specific Gravity: H22° = 1) N/A
Solubility in Water: Soluble
Volatile Organic Content: Negligible
Appearance: Amber liquid
Boiling Point: N/A
Flash Point: N/A
Freezing Point: <32° F. (0° C.)
Odor: Pleasant fragrance

SECTION 4 ◆ FIRE FIGHTING MEASURES

Flammable Properties: Nonflammable
Flash point: N/A
Flammable Limits: Does not apply.
Hazardous Combustion: None known.
Extinguishing Media: Water fog or fine spray, carbon dioxide, dry chemical foam
Fire Fighting Instructions: N/A

SECTION 5 ♦ HAZARDS IDENTIFICATION & FIRST AID MEASURES

HMS HAZARD RATINGS

HEALTH - 0,1,2 FIRE - 0 REACTIVITY - 0 PERSONAL PROTECTION - See Section 8

Routes of Entry: Product may enter the body via eye contact, skin contact and ingestion. See Section 8.

Potential Health Effects:

Eye: Eye contact may cause irritation. Avoid eye contact with the product.

Skin: Skin contact may cause of irritation. In case of skin irritation, wash with soap and water and discontinue use.

Ingestion: Swallowing may cause irritation of mouth and throat. It may also cause nausea. Do not taste or swallow product.

FIRST AID MEASURES

Eye Contact: IMMEDIATELY flush eyes with a directed stream of water for at least 15 minutes while forcibly holding eyelids apart to ensure complete irrigation of all eye and lid tissue. GET IMMEDIATE MEDICAL ATTENTION IF IRRITATION OCCURS.

Skin Contact: Flush skin with water and wash with soap and water. If clothing is penetrated, immediately remove clothing and flush skin with water. Wash clothes before reuse. GET PROMPT MEDICAL ATTENTION IF IRRITATION OCCURS.

Ingestion: Do not induce vomiting. If spontaneous vomiting is inevitable, PREVENT ASPIRATION by keeping victim's head below the knees. GET IMMEDIATE MEDICAL ATTENTION.

Inhalation: Remove to fresh air. If breathing is difficult, have trained person administer oxygen. If respiration stops, have trained person administer mouth-to-mouth resuscitation. GET MEDICAL ATTENTION IMMEDIATELY.

SECTION 6 ♦ STABILITY AND REACTIVITY

Hazardous Polymerization: Hazardous polymerization will not occur.

Materials to Avoid: Avoid contact with strong oxidizing and reducing agents.

Conditions to Avoid: See Section 7.

Hazardous Decomposition Products: Not known. See Section 5.

SECTION 7 ♦ ACCIDENTAL RELEASE MEASURES

Large Spill: Contain spill. Prevent runoff from entering drains, sewers or streams. Dispose in accordance with all applicable federal, state and local health and environmental regulations.

Small Spill: Contain spill. Follow same procedure as above for large spill

SECTION 8 ♦ EXPOSURE CONTROLS, PERSONAL PROTECTION

Personal Protection:

Gloves: N/A

Safety Glasses: Keep out of eyes. A towel or similar protection can be used.

SECTION 9 ♦ HANDLING AND STORAGE

Storage Temperature: Store this product below 120° F. (40° C.), preferably below 75° F. (24° F.), in a cool, dry, well ventilated area away from heat, sparks, flame, oxidizers and out of direct sunlight. For best results use within 12 months. Never co-mingle with bactericides or quaternary disinfectants, as they will degrade/inactivate enzymes.

General Precautions: Keep container closed when handling or storage.

SECTION 10 ♦ OTHER INFORMATION

Disclaimer: The information contained herein is based upon data available to use and reflects our best professional judgment. However, no warranty is expressed or implied regarding the accuracy of such information or the results obtained from the use thereof. We assume no legal responsibility whatsoever for any damage resulting from reliance upon this information since it is being furnished upon the condition that the person receiving it shall make his or her own determination of the suitability of the material described herein for a particular application or storage situation.

MATERIAL SAFETY DATA SHEET

PET WASH

Safe Solutions, Inc. urges each customer or recipient of this MSDS to study it carefully to become aware of and understand the hazards associated with the product. The reader should consider consulting reference works or individuals that are experts in ventilation, toxicology and fire prevention, as necessary or appropriate to use and understand the data contained in this MSDS. Please read U. S. Patent No. 6,663,860.

To promote safe handling, each customer or recipient should: (1) notify its employees, agents, contractors and others whom it knows or believes will use this material or the information in this MSDS and any other information regarding hazards or safety; (2) furnish this same information to each of its customers for the product, and (3) request its customers to notify their employees, customers and other users of the product of this information.

SECTION 1 ◆ CHEMICAL PRODUCT & COMPANY IDENTIFICATION

Trade Name: PET WASH
CAS Name: Mixture
Product Description: A concentrated shampoo with peppermint
Manufacturer's Name: Safe Solutions, Inc.
Address: 2530 Hayes St., Marne, MI 49435-8781
Phone: 1-616-677-2850

SECTION 2 ◆ HAZARDOUS INGREDIENTS

NAME	CAS#	WT.%	TLV
Pet Wash and other Not Nice to products are all proprietary compositions NOT CONSIDERED HAZARDOUS under the OSHA Hazard Communication Standard CFR Title 29 1910.1200 and are 100% EPA exempt products.			

SECTION 3 ◆ PHYSICAL AND CHEMICAL PROPERTIES

Vapor Pressure: mm Hg) N/A
Vapor Density (air = 1) (Air = 1) N/A
Specific Gravity: (H₂O = 1) N/A
Solubility in Water: Soluble
Volatile Organic Content: Negligible
Appearance: clear to cloudy
Boiling Point: 208° - 212° F.
Flash Point: N/A
Freezing Point: <32° F. (0° C.)
Odor: Pleasant fragrance

SECTION 4 ◆ FIRE FIGHTING MEASURES

Flammable Properties: Nonflammable
Flash point: N/A
Flammable Limits: Does not apply.
Hazardous Combustion: None known.
Extinguishing Media: Water fog or fine spray, carbon dioxide, dry chemical foam
Fire Fighting Instructions: N/A

SECTION 5 ♦ HAZARDS IDENTIFICATION & FIRST AID MEASURES

HMS HAZARD RATINGS

HEALTH - 0,1,2 FIRE - 0 REACTIVITY - 0 PERSONAL PROTECTION - See Section 8

Routes of Entry:	Product may enter the body via eye contact, skin contact and ingestion. See Section 8.
Potential Health Effects:	
Eye:	Eye contact may cause irritation. Avoid eye contact with the product.
Skin:	Skin contact may cause of irritation. In case of skin irritation, wash with soap and water and discontinue use.
Ingestion:	Swallowing may cause irritation of mouth and throat. It may also cause nausea. Do not taste or swallow product.
FIRST AID MEASURES	
Eye Contact:	IMMEDIATELY flush eyes with a directed stream of water for at least 15 minutes while forcibly holding eyelids apart to ensure complete irrigation of all eye and lid tissue. GET IMMEDIATE MEDICAL ATTENTION IF IRRITATION OCCURS.
Skin Contact:	Flush skin with water and wash with soap and water. If clothing is penetrated, immediately remove clothing and flush skin with water. Wash clothes before reuse. GET PROMPT MEDICAL ATTENTION IF IRRITATION OCCURS.
Ingestion:	Give 2 glasses of water. Do not induce vomiting. If spontaneous vomiting is inevitable, PREVENT ASPIRATION by keeping victim's head below the knees. GET IMMEDIATE MEDICAL ATTENTION.
Inhalation:	Remove to fresh air. If breathing is difficult, have trained person administer oxygen. If respiration stops, have trained person administer mouth-to-mouth resuscitation. GET MEDICAL ATTENTION IMMEDIATELY.

SECTION 6 ♦ STABILITY AND REACTIVITY

Hazardous Polymerization:	Hazardous polymerization will not occur.
Materials to Avoid:	Avoid contact with strong oxidizing and reducing agents.
Conditions to Avoid:	See Section 7.
Hazardous Decomposition Products:	Not known. See Section 5.

SECTION 7 ♦ ACCIDENTAL RELEASE MEASURES

Large Spill:	Contain spill. Prevent runoff from entering drains, sewers or streams. Dispose in accordance with all applicable federal, state and local health and environmental regulations.
Spill:	Contain spill. Follow same procedure as above for large spill.

SECTION 8 ♦ EXPOSURE CONTROLS, PERSONAL PROTECTION

Personal Protection:	
Gloves:	Always wear gloves (if sensitive) when handling this product.
Safety Glasses:	Keep out of eyes. A towel or similar protection can be used.

SECTION 9 ♦ HANDLING AND STORAGE

Storage Temperature:	Store this product below 120° F. (40° C.), preferably below 75° F. (24° F.), in a cool, dry, well ventilated area away from heat, sparks, flame, oxidizers and out of direct sunlight. For best results use within 12 months. Never co-mingle with bactericides or quaternary disinfectants, as they will degrade/inactivate enzymes.
General Precautions:	Keep container closed when handling or storage.

SECTION 10 ♦ OTHER INFORMATION

Disclaimer:	The information contained herein is based upon data available to use and reflects our best professional judgment. However, no warranty is expressed or implied regarding the accuracy of such information or the results obtained from the use thereof. We assume no legal responsibility whatsoever for any damage resulting from reliance upon this information since it is being furnished upon the condition that the person receiving it shall make his or her own determination of the suitability of the material described herein for a particular application or storage situation.
--------------------	--

MATERIAL SAFETY DATA SHEET

Bugs R Gone®

Safe Solutions, Inc. urges each customer or recipient of this MSDS to study it carefully to become aware of and understand the hazards associated with the product. The reader should consider consulting reference works or individuals that are experts in ventilation, toxicology and fire prevention, as necessary or appropriate to use and understand the data contained in this MSDS.

To promote safe handling, each customer or recipient should: (1) notify its employees, agents, contractors and others whom it knows or believes will use this material or the information in this MSDS and any other information regarding hazards or safety; (2) furnish this same information to each of its customers for the product, and (3) request its customers to notify their employees, customers and other users of the product of this information.

SECTION 1 ♦ CHEMICAL PRODUCT & COMPANY IDENTIFICATION

Trade Name: Bugs R Gone® Herbal Insect Repellent
CAS Name: Mixture
Product Description: Corn Oil, Castor Oil, Rosemary, Peppermint and Thyme
Manufacturer's Name: Safe Solutions, Inc.
Address: 2530 Hayes St., Marne, MI 49435-8781
Phone: 888-443-8738 (email: info@safesolutionsinc.com)

SECTION 2 ♦ HAZARDOUS INGREDIENTS

NAME	CAS#	WT.%	TLV
Bugs R Gone are all proprietary compositions NOT CONSIDERED HAZARDOUS under the OSHA Hazard Communication Standard CFR Title 29 1910.1200 .			

SECTION 3 ♦ PHYSICAL AND CHEMICAL PROPERTIES

Evaporaton Rate: Slower than water
Vapor Density (air = 1) Heavier than air
Weight per Gallon: 7.55 - 7.65
Solubility in Water: Soluble
Volatile Organic : Negligible
Appearance: Clear Liquid
pH: Normal
Boiling Point: Greater than 300° C (572° F).
Flash Point: N/A
Freezing Point: <32° F. (0° C.)
Odor: Pleasant fragrance

SECTION 4 ♦ FIRE FIGHTING MEASURES

Flammable Properties: Nonflammable
Flash point: Over 200° C (392° F)
Flammable Limits: Does not apply.
Hazardous Combustion: None known.
Extinguishing Media: Carbon dioxide, dry chemical, foam.
Fire Fighting Instructions: N/A

SECTION 5 ♦ HAZARDS IDENTIFICATION & FIRST AID MEASURES

HMS HAZARD RATINGS

HEALTH - 0,1,2	FIRE - 0	REACTIVITY - 0	PERSONAL PROTECTION - See Section 8
Routes of Entry:	Product may enter the body via eye contact, skin contact and ingestion. See Section 8.		
Potential Health Effects:			
Eye:	Eye contact may cause irritation. Avoid eye contact with the product.		
Skin:	Skin contact may cause of irritation. In case of skin irritation, wash with soap and water and discontinue use.		
Ingestion:	Swallowing may cause irritation of mouth and throat. It may also cause nausea. Do not taste or swallow product.		

FIRST AID MEASURES

Eye Contact:	If irritation is noted, IMMEDIATELY flush eyes with a directed stream of water for at least 15 minutes while forcibly holding eyelids apart to ensure complete irrigation of all eye and lid tissue. GET IMMEDIATE MEDICAL ATTENTION IF IRRITATION OCCURS.
Skin Contact:	Flush skin with water and wash with soap and water. If clothing is penetrated, immediately remove clothing and flush skin with water. Wash before reuse. GET PROMPT MEDICAL ATTENTION IF IRRITATION OCCURS.
Ingestion:	Do not induce vomiting. If spontaneous vomiting is inevitable, prevent aspiration by keeping victim's head below the knees. Get immediate medical attention if ingestion occurs.
Inhalation:	Remove to fresh air. If breathing is difficult, have trained person administer oxygen. If respiration stops, have trained person administer mouth-to-mouth resuscitation. Get immediate medical attention if irritation occurs.

SECTION 6 ♦ STABILITY AND REACTIVITY

Hazardous Polymerization:	Hazardous polymerization will not occur.
Materials to Avoid:	Avoid contact with strong oxidizing and reducing agents.
Conditions to Avoid:	See Section 7.
Hazardous Decomposition Products:	Not known. See Section 5.

SECTION 7 ♦ ACCIDENTAL RELEASE MEASURES

Waste Disposal	Dispose in accordance with all applicable federal, state and local health and environmental regulations.
Small Spill:	Add solid absorbent, shovel into disposable container, and dry area thoroughly with wiping material.
Large Spill:	Squeegee or pump into holding container, and repeat steps for small.

SECTION 8 ♦ EXPOSURE CONTROLS, PERSONAL PROTECTION

Respiratory Protection:	In the presence of Vegetable Oil Mist, proper respiratory "Nuisance Particulate" No Health Effects by the American Conference of Governmental Industrial Hygienists. No other protective equipment.
--------------------------------	---

SECTION 9 ♦ HANDLING AND STORAGE

Storage Temperature:	Store this product below 120° F. (40° C.), preferably below 75° F. (24° F.), in a cool, dry, well ventilated area away from heat, sparks, flame, oxidizers and out of direct sunlight. For best results use within 12 months. Never co-mingle with bactericides or quaternary disinfectants, as they will degrade/inactivate enzymes.
General Precautions:	Keep container closed when handling or storage.

SECTION 10 ♦ OTHER INFORMATION

Disclaimer:	The information contained herein is based upon data available to use and reflects our best professional judgment. However, no warranty is expressed or implied regarding the accuracy of such information or the results obtained from the use thereof. We assume no legal responsibility whatsoever for any damage resulting from reliance upon this information since it is being furnished upon the condition that the person receiving it shall make his or her own determination of the suitability of the material described herein for a particular application or storage situation.
--------------------	--

Material Safety Data Sheet
Not Nice to Bugs®

Product Name: Not Nice to Bugs®

Product Code: 20509

Ingredients: Deionized Water, Sodium Lauryl Sulfate, Glycerin, Peppermint Oil, Citric Acid.

Hazardous Ingredients: None known.

Carcinogenic Ingredients: None known.

Warning Statement: Hazards to humans and animals. Keep out of reach of children. Product is a non-toxic insect control spray.

Physical & Chemical Data:

Appearance: A clear liquid

Odor: Peppermint

Fire Protection: Avoid sources of flame or ignition.

Reactivity Data: Chemically stable.

Health Hazard Data: None under ordinary use. Avoid eye and/or skin contact. Do not swallow. May cause allergic reaction.

Physiological Effect: All raw materials used in this product are 100% EPA exempted ingredients. May cause eye and/or skin irritation. Harmful if swallowed.

Precaution and Safe Handling Measure: Use reasonable care. Store only in original, tightly sealed container in a dry place. Avoid freezing and excessive heat.

Protection and Control Measures: No special protection required. Use reasonable care. Avoid eye and/or skin contact.

Emergency First Aid Procedures:

Eye Contact: Flush the contaminated eye(s) with a gentle stream of water for at least 15 minutes. See a doctor for medical advice if condition persists.

Ingestion: Induce vomiting. Consult a doctor.

Skin Contact: Wash with soap and water.

Allergic Reaction: Remove to fresh air.

Spill and Disposal Procedure: Dispose of product in accordance to state and federal regulations.

MATERIAL SAFETY DATA SHEET NOT NICE TO LICE®

Safe Solutions, Inc. urges each customer or recipient of this MSDS to study it carefully to become aware of and understand the hazards associated with the product. The reader should consider consulting reference works or individuals that are experts in ventilation, toxicology and fire prevention, as necessary or appropriate to use and understand the data contained in this MSDS. Please read U. S. Patent No. 6,663,860.

To promote safe handling, each customer or recipient should: (1) notify its employees, agents, contractors and others whom it knows or believes will use this material or the information in this MSDS and any other information regarding hazards or safety; (2) furnish this same information to each of its customers for the product, and (3) request its customers to notify their employees, customers and other users of the product of this information.

SECTION 1 ♦ CHEMICAL PRODUCT & COMPANY IDENTIFICATION

Trade Name:	NOT NICE TO LICE
CAS Name:	Mixture
Product Description:	A non-bacterial, readily biodegradable enzymatic soap solution.
Manufacturer's Name:	Safe Solutions, Inc.
Address:	2530 Hayes St., Marne, MI 49435-8781
Phone:	1-616-677-2850

NAME	CAS#	WT.%	TLV
Not Nice to Lice® and other Not Nice to products are proprietary compositions NOT CONSIDERED HAZARDOUS under the OSHA Hazard Communication Standard CFR Title 29 1910.1200. FDA GRAS List, Parts 173, 182 and 184.			

SECTION 3 ♦ PHYSICAL AND CHEMICAL PROPERTIES

Vapor Pressure:	mm Hg) N/A
Vapor Density (air = 1)	Air = 1) N/A
Specific Gravity:	(H ₂ O = 1) N/A
Solubility in Water:	Soluble
Volatile Organic Content:	Negligible
Appearance:	Amber liquid
Boiling Point:	208° - 210° F.
Flash Point:	N/A
Freezing Point:	<32° F. (0° C.)
Odor:	Pleasant fragrance

SECTION 4 ♦ FIRE FIGHTING MEASURES

Flammable Properties:	Nonflammable
Flash point:	N/A
Flammable Limits:	Does not apply.
Hazardous Combustion:	None known.
Extinguishing Media:	Water fog or fine spray, carbon dioxide, dry chemical foam
Fire Fighting Instructions:	N/A

SECTION 5 ♦ HAZARDS IDENTIFICATION & FIRST AID MEASURES

HMS HAZARD RATINGS

HEALTH - 1 FIRE - 0 REACTIVITY - 0 PERSONAL PROTECTION - See Section 8

Routes of Entry: Product may enter the body via eye contact, skin contact and ingestion.

Potential Health Effects:

Eye: Eye contact with product may cause irritation. Avoid eye contact with the product.
Skin: Skin contact may cause of irritation. Avoid skin contact with product.
Ingestion: Swallowing may cause irritation of mouth and throat. It may also cause nausea. Do not taste or swallow product.

FIRST AID MEASURES

Eye Contact: IMMEDIATELY flush eyes with a directed stream of water for at least 15 minutes while forcibly holding eyelids apart to insure complete irrigation of all eye and lid tissue. GET IMMEDIATE MEDICAL ATTENTION IF IRRITATION OCCURS.
Skin Contact: Flush skin with water and wash with soap and water. If clothing is penetrated, immediately remove clothing and flush skin with water. Wash clothes before reuse. GET PROMPT MEDICAL ATTENTION IF IRRITATION OCCURS.
Ingestion: Give 2 glasses of water. Do not induce vomiting. If spontaneous vomiting is inevitable, PREVENT ASPIRATION by keeping victim's head below the knees. GET IMMEDIATE MEDICAL ATTENTION.
Inhalation: Remove to fresh air. If breathing is difficult, have trained person administer oxygen. If respiration stops, have trained person administer mouth-to-mouth resuscitation. GET MEDICAL ATTENTION IMMEDIATELY.

SECTION 6 ♦ STABILITY AND REACTIVITY

Hazardous Polymerization: Hazardous polymerization will not occur.
Materials to Avoid: Avoid contact with strong oxidizing and reducing agents.
Conditions to Avoid: See Section 7.
Hazardous Decomposition Products: Not known. See Section 5.

SECTION 7 ♦ ACCIDENTAL RELEASE MEASURES

Large Spill: Contain spill. Prevent runoff from entering drains, sewers or streams. Dispose in accordance with all applicable federal, state and local health and environmental regulations.
Spill: Contain spill. Follow same procedure as above for large spill.

SECTION 8 ♦ EXPOSURE CONTROLS, PERSONAL PROTECTION

Personal Protection:
Gloves: Wear gloves when handling this product.
Safety Glasses: Always wear eye protection. Goggles or safety glasses with side shields are recommended.

SECTION 9 ♦ HANDLING AND STORAGE

Storage Temperature: Store this product below 120° F. (40° C.), preferably below 75° F. (24° F.), in a cool, dry, well ventilated area away from heat, sparks, flame, oxidizers and out of direct sunlight. For best results use within 12 months. Never co-mingle with bactericides or quaternary disinfectants, as they will degrade/inactivate enzymes.
General Precautions: Keep container closed when handling or storage.

SECTION 10 ♦ OTHER INFORMATION

Disclaimer: The information contained herein is based upon data available to use and reflects our best professional judgment. However, no warranty is expressed or implied regarding the accuracy of such information or the results obtained from the use thereof. We assume no legal responsibility whatsoever for any damage resulting from reliance upon this information since it is being furnished upon the condition that the person receiving it shall make his or her own determination of the suitability of the material described herein for a particular application or storage situation.

MATERIAL SAFETY DATA SHEET
SAFE SOLUTIONS #2 ENZYME CLEANER, KLEEN 'EM AWAY NATURALLY® and/or KLEEN KILL® ENZYME CLEANER

Safe Solutions, Inc. urges each customer or recipient of this MSDS to study it carefully to become aware of and understand the hazards associated with the product. The reader should consider consulting reference works or individuals that are experts in ventilation, toxicology and fire prevention, as necessary or appropriate to use and understand the data contained in this MSDS.
Note: This product may vary from batch to batch.

To promote safe handling, each customer or recipient should: (1) notify its employees, agents, contractors and others whom it knows or believes will use this material or the information in this MSDS and any other information regarding hazards or safety; (2) furnish this same information to each of its customers for the product, and (3) request its customers to notify their employees, customers and other users of the product of this information.

SECTION 1 ◆ CHEMICAL PRODUCT & COMPANY IDENTIFICATION

Trade Name: SAFE SOLUTIONS #2 ENZYME CLEANER, KLEEN 'EM AWAY and/or KLEEN KILL ENZYME CLEANER®
CAS Name: Mixture
Product Description: A concentrated non-bacterial, readily biodegradable enzymatic solution.
Manufacturer's Name: Safe Solutions, Inc.
Address: 2530 Hayes St., Marne, MI 49435-8781
Phone: 1-616-677-2850

NAME	CAS#	WT.%	TLV
This is a proprietary composition NOT CONSIDERED HAZARDOUS under the OSHA Hazard Communication Standard CFR Title 29 1910.1200. Please read U. S. Patent No. 6,663,860. Note: Each batch varies and the Author is concerned the protease may exceed 1%.			

SECTION 3 ◆ PHYSICAL AND CHEMICAL PROPERTIES

Vapor Pressure: <0.011 mm @ 68° F. (20° C.)
Vapor Density (air = 1) >1
Specific Gravity: 1.000-1.010 @ 77° F. (25° C.)
Solubility in Water: Soluble
Volatile Organic Content: Negligible
Content:
Appearance: Translucent, orange-brown liquid
pH: 3.25 - 4.20 @ 77° F. (25° C.)
Boiling Point: >212° F. (100° C.)
Flash Point: >212° F. (100° C.)
Freezing Point: <32° F. (0° C.)
Viscosity: -7 cps @ 77° F. (25° C.)
Evaporation Rate: <0.01 *N-butyl acetate = 1
Weight: 8.4 - 8.5 lb./gallon (3.8 Kg/liter)
Odor: Mild

SECTION 4 ◆ FIRE FIGHTING MEASURES

Flammable Properties: Flash point: >212° F.
Method Used: Open Cup
Flammable Limits: Does not apply.
Hazardous Combustion: None known.
Products:
Extinguishing Media: Water fog or fine spray, carbon dioxide, dry chemical, foam
Fire Fighting Instructions: Wear self-contained breathing apparatus and protective clothing. Use water to cool containers. Turn off electrical service to eliminate source of ignition.

SECTION 5 ♦ HAZARDS IDENTIFICATION & FIRST AID MEASURES

HMS HAZARD RATINGS

Routes of Entry:	HEALTH - 1	FIRE - 0	REACTIVITY - 0	PERSONAL PROTECTION - See Section 8
Potential Health Effects:			Product may enter the body via eye contact, skin contact and ingestion.	
Eye:			Eye contact with product may cause irritation. Avoid eye contact with the product.	
Skin:			Skin contact may cause of irritation. Avoid skin contact with product.	
Ingestion:			Swallowing may cause irritation of mouth and throat. It may also cause nausea. Do not taste or swallow product.	
			FIRST AID MEASURES	
Eye Contact:			IMMEDIATELY flush eyes with a directed stream of water for at least 15 minutes while forcibly holding eyelids apart to insure complete irrigation of all eye and lid tissue. GET IMMEDIATE MEDICAL ATTENTION IF IRRITATION OCCURS.	
Skin Contact:			Flush skin with water and wash with soap and water. If clothing is penetrated, immediately remove clothing and flush skin with water. Wash clothes before reuse. GET PROMPT MEDICAL ATTENTION IF IRRITATION OCCURS.	
Ingestion:			Give 2 glasses of water. Do not induce vomiting. If spontaneous vomiting is inevitable, PREVENT ASPIRATION by keeping victim's head below the knees. GET IMMEDIATE MEDICAL ATTENTION.	
Inhalation:			Remove to fresh air. If breathing is difficult, have trained person administer oxygen. If respiration stops, have trained person administer mouth-to-mouth resuscitation. GET MEDICAL ATTENTION IMMEDIATELY.	

SECTION 6 ♦ STABILITY AND REACTIVITY

Hazardous Polymerization:	Hazardous polymerization will not occur.
Materials to Avoid:	Avoid contact with strong oxidizing and reducing agents.
Conditions to Avoid:	See Section 7.
Hazardous Decomposition Products:	Not known. See Section 5.

SECTION 7 ♦ ACCIDENTAL RELEASE MEASURES

Large Spill:	Contain spill. Prevent runoff from entering drains, sewers or streams. Dispose in accordance with all applicable federal, state and local health and environmental regulations.
Spill:	Contain spill. Follow same procedure as above for large spill.

SECTION 8 ♦ EXPOSURE CONTROLS, PERSONAL PROTECTION

Personal Protection:	
Gloves:	Wear gloves when handling this product.
Safety Glasses:	Always wear eye protection. Goggles or safety glasses with side shields are recommended.

SECTION 9 ♦ HANDLING AND STORAGE

Storage Temperature:	Store this product below 120° F. (40° C.), preferably below 75° F. (24° F.), in a cool, dry, well ventilated area away from heat, sparks, flame, oxidizers and out of direct sunlight. For best results use within 12 months. Never co-mingle with bactericides or quaternary disinfectants, as they will degrade/inactivate enzymes.
General Precautions:	Keep container closed when handling or storage.

SECTION 10 ♦ OTHER INFORMATION

Disclaimer:	The information contained herein is based upon data available to use and reflects our best professional judgment. However, no warranty is expressed or implied regarding the accuracy of such information or the results obtained from the use thereof. We assume no legal responsibility whatsoever for any damage resulting from reliance upon this information since it is being furnished upon the condition that the person receiving it shall make his or her own determination of the suitability of the material described herein for a particular application or storage situation.
--------------------	--

Note: Various preformed enzyme compositions are also covered by Stephen L. Tvedten's U. S. Patent No. 6,663,860 and they continually vary in formulations the same way that the same man and woman never produce identical children. In addition protease enzymes can be over 1% and the pH is reduced to an acidic 3.5 pH in order to "stabilize" the product and retard further bacterial action and/or decomposition. Therefore, Stephen L. Tvedten prefers the more consistent Safe Solutions, Inc. products.

HEALTH EFFECTS - From the Enzyme Technical Association

When handling concentrated enzyme preparations — as with most substances used in industrial processes — care should be taken to avoid skin contact and inhalation of aerosols. Enzymes can be used safely without any adverse health effects through the use of good work practices, engineering controls, and appropriate personal protective equipment.

SYMPTOMS OF ENZYME EXPOSURE

IRRITATION - Prolonged skin contact with proteolytic enzymes can cause skin irritation. The eyes can also be irritated by contact with proteolytic enzymes. As would be expected, the more concentrated the enzyme preparation, the greater the potential for producing irritation upon contact. Skin irritation is most likely to appear in body areas where perspiration occurs, i.e., hands, armpits, groin and feet, and around tight fitting clothing areas, such as cuffs, waist, collar and facial areas in contact with face masks. This irritation is caused by the chemical properties of the proteases and is not an allergic response.

Other types of enzymes, i.e., nonproteolytic enzymes, have not been shown to cause skin and eye irritation. However, skin and eye contact with all enzymes should be minimized as part of personal hygiene practices. As with any chemical, avoid contact with enzymes if the skin is broken or irritated. Please consult the manufacturer's MSDS for information on the hazards associated with other ingredients of the enzyme preparation. Also, inhaling high levels of enzyme-containing aerosols may result in coughing and/or congestion due to irritation of the mucous membranes of the respiratory tract. Respiratory irritation is a very rare occurrence and should never occur when adequate manufacturing controls are in place.

ALLERGY

As with any protein that is foreign to the respiratory tract, repeated inhalation of enzyme contained in aerosols can cause an allergic response. Predicting who will develop an allergic response or the level and duration of exposure needed to elicit a response is not known as this time.

As with any protein allergen, such as pollen, mild to severe symptoms may occur and may include any, or a combination of, the following: Asthma, sneezing, nasal or sinus congestion, coughing, watery eyes, runny nose, tightness of the chest, hoarseness or shortness of breath. These symptoms may develop during work hours or can be delayed, occurring even two or more hours after work exposure. Symptoms will occur only in an allergic individual if enzyme aerosols are inhaled, and usually disappear within hours or a few days after exposure is eliminated. Currently, there is no evidence to indicate that skin contact with enzymes will cause allergic contact dermatitis. Aside from allergies, no long-lasting effects from working with enzymes have been found.

Ordinary cold or flu symptoms may resemble enzyme allergy. If symptoms appear more often during working days, especially at the beginning of the work week and seldom or never on the weekends or holidays, they may be due to enzyme exposure, and this possibility should be investigated. A person exhibiting allergic symptoms should consult a physician.

ALLERGY TESTS

There are two types of simple medical tests that can be made to determine if an individual is sensitized to a particular enzyme. When a person becomes sensitized to a substance, allergic antibodies will be produced against the substance. Sensitization by itself is not a disease, but rather an indication of exposure to the enzyme that may lead to allergic symptoms. However, not all sensitized individuals develop allergic symptoms. By detecting sensitization early, enzyme exposure can be controlled to prevent allergy symptoms onset.

Allergic antibodies can be detected either through a laboratory blood test (such as RadioAllergo Sorbent Test- RAST or Enzyme Linked Immuno Sorbent Assay - ELISA) or by a simple skin prick test commonly used by allergists. The laboratory blood test measures the amount of antibody in the blood, with a certain level indicating sensitization to a specific enzyme preparation. The skin prick test consists of pricking the skin with a solution of the enzyme (antigen preparation). In a sensitized individual, a raised, reddened area (wheal and flare) will appear on the skin. If the laboratory blood test or skin test is positive, it is an indication that sensitization has developed and allergic symptoms may result unless precautions are taken to reduce exposure. Pulmonary function testing is also a means to screen whether an individual has allergic symptoms. Consult a physician for advice. Additional information on allergy test procedures and materials is available from the enzyme manufacturer or the Enzyme Technical Association. <http://www.enzymetechnicalassoc.org/>

WORKING SAFETY WITH ENZYME PREPARATIONS

SAFE HANDLING PRACTICES: Safe handling of enzyme preparations can be accomplished through proper work practices, engineering controls, and use of protective equipment. When working with these preparations, it is important to use work practices that do not generate aerosols or that result in direct skin contact. For each work operation, careful consideration must be given to minimizing aerosol formation and skin or eye contact.

Aerosols are formed through high-energy operations such as mixing, grinding, washing with high water pressure or steam, and using compressed air for cleanup operations. Sweeping, blowing, splashing, steam cleaning, and high-pressure water flushing must be avoided. Mixing and grinding operations should be contained as much as possible, and the areas in which they take place should be provided with adequate local exhaust ventilation.

When handling enzyme preparations or enzyme-contaminated equipment, avoid direct skin contact. Wear appropriate gloves when there is a potential for skin contact with enzymes. Wash enzyme-contaminated surfaces thoroughly before handling, especially when using preformed enzyme mixtures.

USE OF PERSONAL PROTECTIVE EQUIPMENT

RESPIRATORY PROTECTION

Under most operating conditions involving enzymes, respiratory protection is not normally necessary. There are some operations, such as spill cleanup, equipment cleaning and equipment repairing, that may generate aerosols. In these instances, respiratory protection may be necessary. The use of respiratory protection is usually necessary when working with powdered enzymes. Respiratory protection should also be used when indicated by your supervisor, safety professional or medical personnel.

The Occupational Safety and Health Administration (OSHA) respiratory protection standard must be followed in the selection, training and use of respirators. Use only National Institute of Occupational Safety and Health (NIOSH) approved respiratory protection. <http://www.cdc.gov/niosh/npptl/topics/respirators/>

PROTECTIVE CLOTHING AND GLOVES

Protective clothing should be worn when there is a potential for skin or eye contact. This clothing may include gloves, aprons, safety glasses and outer garments, such as coveralls or lab coats. Protective clothing is particularly important when working with proteolytic enzymes which are known to cause skin irritation. Operations that may require the use of protective clothing include spill cleanup, equipment maintenance and equipment cleaning. Gloves should be worn when there is a potential for skin contact with any enzyme material. Cotton liners or cotton-lined gloves are recommended to absorb perspiration. Protective clothing should be removed prior to leaving the work area and should not be worn into other areas of the facility (e.g, lunchroom, offices) or to the home.

The OSHA personal protective equipment standard (1910.132-138) must be followed in selection, training and use of personal protective equipment. Consult the enzyme manufacturer and/or its MSDS for additional information on the selection of personal protective equipment.

http://www.osha.gov/pls/oshaweb/owadisp.show_document?p_table=STANDARDS&p_id=9777

MAINTENANCE AND SPILLAGE

MAINTENANCE: Whenever maintenance is to be performed on equipment that has been in contact with enzymes, the equipment should be cleaned before the work is begun. Use wet washing (flooding, wiping) or a vacuum system equipped with a high-efficiency particulate air filter (HEPA) to clean equipment or spills. High-pressure cleaning (steam, air or water) must be avoided, since these operations are known to cause aerosol formation. Personal protective equipment (gloves, respirators, eye protection) may be required during some maintenance operations.

SPILL CLEANUP: Spilled enzymes must be removed immediately by central vacuum system, vacuums equipped with a HEPA filter, mopping or washing. To prevent dust or aerosol formation during cleanup, do not sweep or use high water pressure, steam or compressed air on spills. Use plenty of water in wet washing to flush all enzyme material away to prevent enzyme dust generation from dried material. Dependent upon the place and extent of the spill, respiratory protection and protective clothing may be required during cleanup. Disposal of spilled material should be in compliance with federal, state and local regulations.

PERSONAL CLEANLINESS

Personal cleanliness is essential to prevent irritation from proteolytic enzymes to skin and mucous membranes. The irritation response on skin is increased in the presence of moisture and when the natural oils of the skin are removed.

The following procedures are recommended to prevent irritation:

1. Hands should be washed with water and mild soap before leaving the work area and immediately after coming into contact with enzyme materials.
2. Change work clothes daily and whenever they are soiled with enzyme material. Do not wear work clothing home.
3. Avoid touching your face and eyes with enzyme contaminated clothing or gloves.
4. Wear cotton-lined gloves to absorb perspiration.

MEASURING ENZYME LEVELS IN AIR

There are air monitoring techniques available to measure the level of enzyme dust or mist in the air. The American Conference of Governmental Industrial Hygienists (ACGIH) has established a threshold limit value (TLV) for only one class of enzymes, subtilisins, of 60 ng/m³ as a ceiling limit. Both low-flow and high-flow air sampling methods are available for some enzymes. Contact the enzyme manufacturer for additional information.

FIRST AID TREATMENT

SKIN CONTACT: Most enzyme materials are water soluble; therefore, the exposed skin should first be thoroughly flushed with water and then washed with a mild soap and water. If clothes are contaminated, remove them, shower and change into clean clothes. Immerse the contaminated clothes in water and wash them as usual.

INHALATION: Remove the individual from exposure and monitor for irritation or allergic symptoms. If symptoms occur, consult a physician. Symptoms may occur as late as 2 or more hours after exposure.

EYE CONTACT: Rinse the eyes thoroughly with water for at least 15 minutes and then consult a physician.

CONSUMER EXPOSURE ASSESSMENT

Prior to introducing an enzyme preparation into a consumer product, the potential for consumer exposure to the enzyme and possible health effects should be assessed. Since enzymes are respiratory allergens and some enzymes are irritants, both the potential for inhaling the enzyme preparation and for skin contact should be evaluated. Important factors that need to be considered include the following: Product use, potential misuses, enzyme concentration and product form (liquid, powder, granule, foam), duration and frequency of exposure, potential exposure level and the no-effect level of enzyme exposure.

SUMMARY

In this booklet we have presented information on safe handling practices for working with enzymes. Through the use of proper work practices and control measures, enzymes can be handled in the work place without any adverse health effects. All work with enzymes must be done with care and proper precautions. Avoid generation of aerosols and direct skin or eye contact when handling enzyme materials. Even though there may be no visible signs of dust or aerosols, safety measures must be followed at all times. By following these relatively simple work practices and control measures, enzymes can be handled safely. It is hoped the information provided will help answer some of the questions about enzymes and how to work with them safely. If you should have further questions, please consult your enzyme supplier.

GLOSSARY OF TERMS

ALLERGY A condition involving exposure to a material (allergen) which results in development of antibodies in the body against the material. When a person becomes allergic, exposure to the material may produce reactions characterized by itching, sneezing, coughing and/or tightness in the chest. Protein substances are often allergens.

ANTIBODY Specialized proteins of the immune system that recognize specific allergens and trigger an immune response.

ANTIGEN A protein, carbohydrate or other substance capable of eliciting an immune response.

ASTHMA A medical condition in which the airways of the lung narrow in response to irritation, allergy or other stimulus. Symptoms may include shortness of breath, wheezing and labored coughing.

CATALYST A substance which speeds up a chemical reaction.

ELISA (Enzyme Linked Immuno Sorbent Antibody Assay) A sensitive laboratory method of detecting serum antibodies resulting from antigen exposure.

ENGINEERING CONTROLS Methods which include the appropriate application of isolation, ventilation and substitution (equipment, process or material) to reduce potential exposure to employees to environmental aerosols.

ENZYME Enzymes are large protein molecules, and like other proteins, they are made up of long chains of amino acids. Enzymes are present in all living organisms, where they perform essential functions of converting food to energy and new cell material.

FERMENTATION A biological process in which one natural substance is converted to another by a microorganism.

HEPA a high-efficiency particulate air filter. According to NIOSH, a high-efficiency filter is one that is at least 99.97% efficient when challenged with 0.3 μm dioctyl phthalate (DOP) particle.

MICROORGANISMS Any microscopic animal or plant, especially bacteria and fungi.

MSDS - Material Safety Data Sheet. MSDSs are developed by the manufacturers, importers or distributors of chemical substances to provide information to customers on the safe handling of their products.

NIOSH National Institute of Occupational Safety and Health. This government agency was established as the research counterpart to OSHA. NIOSH activities including testing and certifying respirators and conducting research and investigations on the health effects of occupational exposures.

NONPATHOGENIC Does not cause the production or development of a disease.

NONTOXIGENIC Does not produce a poison or toxin.

OSHA U. S. Occupational Safety and Health Administration. This agency was established to promulgate and enforce workplace health and safety standards.

PROTEOLYTIC ENZYMES (PROTEASES) Enzymes that hydrolyze (break apart) peptide bonds.

RAST (RadioAllergoSorbent Test) A laboratory test for detecting and measuring antibodies in the blood of persons exposed to excessive airborne concentrations of specific allergens.

SENSITIZATION Sensitization is an indication of exposure to an enzyme that may lead to allergic symptoms. When individuals develop antibodies to an enzyme, they are considered to be sensitized to that particular enzyme preparation.

Copyright© 1999 Enzyme Technical Association. Last modified: November 22, 1999.

Testimony re Protease Enzymes

Hi Steve,

I worked in a laundry detergent factory for 10+ years. I became sensitized to a protease enzyme during my first year even though I was "one of the better ones for wearing required PPE" Several of us where sensitized around the same time and the investigation that followed discovered it was because of defective respirators. We were using Air Mates at the time and the gasket that was supposed to seal around the filter failed and allowed enzymes and dust to bypass the filter. As a result, the entire plant population was provided with new Breath Easy respirators.

The problem after that initial sensitization was that it was believed that further low level exposures to the various chemicals, including enzymes and perfumes and the finished detergent products would not be of concern to an atopic, sensitized individual as long as the proper PPE was used when necessary. So I remained working in the same job where I was constantly exposed to low levels of all these chemicals as well as to occasional high levels during a process upset. I had had severe asthma as a child, which I outgrew, and so was very dilligent about wearing my respirator and other PPE when required however there were always occasions when one could walk into an exposure situation unexpectedly until the PPE could be donned. I developed asthma but since I was also using these detergent products at home and kept a small stockpile in my basement, from deals we got as employees, I was constantly exposed and could not see any difference in how I felt at work vs at home.

I began to get carpal tunnel symptoms and had surgeries in both wrists but the symptoms returned. Then I started having arthritic symptoms throughout my body. After 6 months of light office duties following the surgeries, I went back out to my regular job in the process area and after 3 days I had an incident when I was trying to open a drum of a chemical and could not hold onto the tool. I then discovered that my left hand was swollen to twice the size of the other one. I was ordered to return to office work indefinitely which I did. (The entire plant, including the office and parking lot, was contaminated by the industrial perfumes and probably other chemicals as well so I was still exposed) I continued to have asthma and arthritic problems as well as problems with fatigue, memory and thinking clearly. I started seeing an Environmental Doctor and through testing discovered I was sensitive to perfumes and many other chemicals. I was doing desensitizing treatments with serums for the various sensitivities and did well for a while.

Then things started to change. I had less asthmatic problems and my arthritic problems were much better but I started having stroke-like symptoms like slurred speech, staggered gait, dizziness and nausea which became progressively worse. My doctor did some tests and found my blood was very thick and sticky and I was on the verge of a stroke. She ordered me to stop working, clean every chemical from my home and to wash everything in Borax, baking soda and vinegar several times to remove the detergent and fabric softener residues. The more of this we accomplished, the better I felt while at home. However, I now had full blown MCS and could not tolerate any other environments for any length of time without those symptoms returning.

I can't help but wonder if I would have remained healthy had I been removed form the chemical environment as soon as my sensitivity to the enzymes was discovered. The repeated or constant exposures to things I was sensitive to caused my MCS. The real problem is that the TLV on many chemicals is really unknown, especially for people who's detox pathways may be inadequate to handle the onslaught, and so they make a guess and basically pick a number out of a hat! This is really inadequate because although it may be protective of a strong and healthy individual, it does not take everyone into account. — Bonita Poulin

How Protease and Other Enzymes and Surfactants in Safe Solutions, Inc. Enzyme Cleaners Work to Naturally Destroy Insects and Other Arthropods

Insectivore plants digest their insect prey with natural enzymes. Some predator arthropods inject (extra-oral) digestive enzymes through small punctures in their insect prey's cuticle with their fangs or stylets or tubes or mandibles. These natural enzymes act as digestive or macerating agents, predigesting the internal organs contained within the insect's body by the still intact exoskeleton. Liquid feeding can then begin from the pre-digestive reservoir the predator has made out of the insect's body. Digestive enzymes are contained in a predator's salivary gland complex and/or gut and are injected or sprayed into or onto the prey to hydrolyze tissues. Other predators shred or swallow their prey whole and then digest and/or predigest their prey with enzymes. The venoms of scorpions and spiders and snakes also contain digestive enzymes. Predators that utilize extra-oral digestion or venom are using natural enzymes to rapidly macerate their prey's tissues with a complex of enzymes including proteases, lipases, nucleases, hyaluronidases and carbohydrases that attack the intercellular matrix. Every insect that molts uses enzymes to create a chemical "zipper" to allow it to shed its exoskeleton. Spray some diluted enzymes on an insect and it literally "dissolves." Safe Solutions, Inc. Enzyme Cleaners contain natural protease enzymes (less than 1%) and are, therefore, natural control products with no pesticide poisons and all their ingredients are food grade and/or GRAS materials.

Termite Control Bait Stations

Dine-O-Mites® bait stations with mite predators that seek out and destroy termites will soon be available for home use - see <http://www.getipm.com>.

Herbruck's Nature's Supreme 2-5-3, Nutri-Plus 10-3-4 and/or Pelleted Poultry Manure 4-3-2, bgeerlings@herbrucks.com

Organic fertilizer/matter is the most important soil nutrient because it is the fuel for the community of microorganisms that inhabit the soils. Synthetic fertilizers contain salts and often chlorine that kill these microorganisms. Virgin soil can contain 10% organic matter but cultivation and/or aeration let in air that burns up or oxidizes that organic content very quickly.

Organic material attracts and holds nutrients, reduces leaching losses, binds soil particles into aggregates (producing a good tilth) and soaks up and holds moisture. A single teaspoon of soil with organic matter can contain 20 million filamentous fungi, 5 million bacteria and 1 million protozoa. These microorganisms fix free nitrogen (78% of the earth's atmosphere) by combining oxygen and/or hydrogen to make compounds (e.g., nitrates and/or ammonia) so plants can use it (the fixed nitrogen) to synthesize proteins. Nitrogen is the most expensive part of synthetic fertilizers and it requires 25,000 BTU's of energy to produce a single pound of synthetic nitrogen fertilizer - microorganisms produce them for you for free. The microorganisms also produce organic acids that serve as a solvent for the minerals and help chelate the soil so roots can take up nutrients and they prey on plant pathogens.

Organic soils quickly provide free mole and grub control and will eventually control weeds by making healthier, stronger grass plants. Organic matter and their microorganisms are better stewards of our environment and your soil and plants than any chemical company. The number one alternative to synthetic chemical fertilizer has always been manure. Second is seaweed, wood ashes, pine needles, hay, straw, green manure and compost added to the soil. We do not recommend sewage sludge because it also contains the effluents of industry that include heavy metal contamination.

The Greek Theophrastus 3 centuries B.C.E. described how bean plants added fertility to the soil. Today we realize how legumes like alfalfa, white clover, beans and peas use symbiotic bacteria (e.g. in the genus *Rhizobium*) to fix nitrogen in the form of nodules on their roots.

For those of you without the time to plant cover crops of legumes, or the means to till in vast amounts of compost and other vegetative/organic matter, we have simplified the problem for you and can provide you with composted chicken manure (salmonella-free).

Herbruck's Nature's Supreme 2-5-3 - 10% calcium (granular compost 50# bags) - covers 5,000 sq. ft.
Nutri-Plus 10-3-4 - 5% calcium (composted poultry manure, ammonium sulfate, potassium sulfate 50# bags)
- covers 5,000 sq. ft.

Pelleted Poultry Manure 4-3-2

Safe Solutions, Inc. Enzyme Cleaner can be used as a foliar fertilizer.

Proposed **NOT NICE TO FLEAS® (But nice to pets)**

Not Nice to Fleas will be an EPA exempt pet shampoo for cats and dogs that uses sodium laurel sulfate as a flea and tick remover. The FDA lists sodium laurel sulfate as a food additive and considers it a GRAS material. Its non-pesticidal uses far outnumber its use as a pesticide.

Sodium lauryl sulfate is a detergent-like substance that employs a nontoxic mode of action in controlling fleas and ticks on household pets. The potential for dermal and/or inhalation exposure exists to people applying the registered pet shampoo product. However, this exposure is not considered significant and does not create a health risk concern. Published reports suggest that sodium lauryl sulfate has low acute mammalian toxicity and no known chronic effects. EPA has no reports of adverse effects resulting from its use. Both exposure and health risks to people using the product are expected to be low.

EPA also believes that ... use of sodium lauryl sulfate should not result in unreasonable adverse effects to human health or the environment. <http://www.epa.gov/REDs/factsheets/4061fact.pdf>

**LICE R GONE® and/or Safe Solutions, Inc. Improved NOT NICE TO LICE®
(in the U. K.) are Nice to Kids**

LICE and NIT REMOVERS AND HAIR CONDITIONER

Make the hair so slick, they can't stick!

FOR EXTERNAL USE ONLY

Contain no volatile, synthetic pesticide poisons.

Keep product out of eyes. - Keep this and all cleaning products out of the reach of children.

DIRECTIONS FOR USE:

Wet hair with warm water. Use a small amount of product (about ½ oz.) to make a lather. **Keep shampoo out of the eyes to prevent eye irritation.** Massage for 5 - 10 minutes; then rinse. This bottle contains enough material for multiple shampoos. If any nits remain after your rinse, please apply some Tangles are Gone® hair conditioner and comb with a fine-tooth comb. Repeat as often as needed. Lice R Gone is FDA registered and covered by U. S. Patent No. 6,663,860.

CAUTION: May cause skin, eye and respiratory tract irritation. (Not sold as a pediculicide by Safe Solutions, Inc.)

INGREDIENTS: filtered and purified water, NATURAL enzyme cleaners with protease, GRAS surfactants and stabilizers and peace of mind! (Basically baby shampoo, purified water, meat tenderizer, glycerin, peppermint oil and sodium borate.) If you have any questions or comments, please call or write or order from:

**Safe Solutions, Inc.
2530 Hayes Street
Marne, MI 49435-8781
1-888-443-8738
e-mail: info@safesolutionsinc.com**

The Author believes the National Drug Code (NDC) for the original Genesis Not Nice to Lice® was 36819407.

HOW TO USE LICE R GONE® SHAMPOO or improved NOT NICE TO LICE® SHAMPOOS

If you have long hair:

1. Wet hair with warm water and place a clean wash towel over eyes for protection.
2. Use enough shampoo to make a lather (½ oz. to 1 oz.).
3. Spread over entire hair and scalp.
4. Massage deeply into scalp and hair.
5. Leave on 15 minutes.
6. Comb and rinse thoroughly with a strong spray of very warm water. The lice and nits will rinse out.

If you have short hair:

1. Wet hair with warm water and place a clean wash towel over eyes for protection.
2. Put ½ oz. Lice R Gone® Shampoo onto hair and scalp.
3. Spread over entire scalp.
4. Massage deeply into hair and scalp.
5. Leave on 5 - 10 minutes.
6. Comb and rinse thoroughly with a strong spray of very warm water. The lice and the nits will rinse out!

Inspect under bright light. If any nits remain:

1. Rinse 2 minutes with warm water.
2. Apply Tangles R Gone® hair conditioner, root to end, and let stand 3 minutes; do not rinse.
3. Use fine-tooth comb to remove any remaining nits.
4. Rinse thoroughly.

When used properly, you can be lice and nit free in 20 minutes! **MAY BE USED AS OFTEN AS NEEDED.**

Walk-the-Plank® is one of the simplest ways to catch a rodent or animal. Using a 5-gallon to 55-gallon container with a plank to the rim, with either a can suspended over the middle, or floating fruit or grain, e.g., whole oats or sunflower seeds, on the water below. The water is not visible until the pest jumps in for the food.

Not Nice to Bugs® is a pestisafe/pesticide made with 100% EPA exempted ingredients.

In Process: Not Nice to Dirt and Stains®, an enzyme-based laundry detergent and fabric softener. 1 oz. per load freshens, deodorizes, cleans and softens clothes and dissolves dirt, stains and fecal matter and can eliminate the need for disinfectants. Lint basically disappears and the results are spectacular, especially after clothing has been cleaned several times and all of the old “crud” has been washed out of the fibers.

In Process: Not Nice to Dust Mites®, an enzyme cleaner formulated to control dust mites and the fungus *Aspergillus repens* which predigests human skin flakes into a form the dust mites can eat. Not sold as a pesticide.

Safe Solutions Pet Wash can be used to control fleas, mange, mites and ticks on cats, dogs, livestock, birds and reptiles. Ear mites are very tiny arachnids and ectoparasites that live in your pets' ear canals and feed on its blood. The “dirt” in your pets' ears is from their waste matter. Diluted enzymes (SSI Pet Wash) will not only kill the mites, but will also act as an antibiotic to clean up any infection and will help flush out the “dirt”, especially if you aspirate. The enzymes (SSI Pet Wash) will also help heal a wound by destroying fungal and bacterial infections. Safe Solutions Pet Wash will also safely remove skunk odor. Safe Solutions Pet Wash is not a poison, but a mix of natural enzymes and surfactants, and it is not sold as a pesticide.

In Process: Not Nice to Ants™, Anti-Ants™, Not Nice to Hair Spray™, Not Nice to Fire Ants™, Not Nice to Lice®, Not Nice to Stinging Insects™ all are either enzyme cleaners or made with exempted ingredients formulated in different dilutions or ways to control pests. (Not sold as pesticides.)

In Process: Not Nice to Fire Ants™ is a concentrated enzyme solution to control fire ant colonies by drenching or individually by spraying. Not sold as a pesticide.

Not Nice to Arthritis® is a nutritional supplement and topical ointment formulated to aid in arthritis relief.

In Process. Not Nice to Scabies® is an enzyme cleaner formulated to control scabies. Not sold as a scabicide.

In Process: Not Nice to Skin Irritations® is a probiotic microbe spray/liquid. Try it on any rash, skin irritation, itch or skin problem. Many people have found relief from poison ivy, athlete's foot, foot rot, scabies, bites, stings, ringworm and other skin problems. Many animals have found relief from ear mites, mange and other skin conditions. Lice R Gone® also relieves skin irritations.

In Process. Not Nice to Odors™ is a probiotic microbe spray/liquid that removes virtually any odor instantly.

Not Nice to Toxins® is a nutritional supplement formulated to aid in detoxification and the removal of toxins and parasites.

In Process. Not Nice to Carpal Tunnel™ - This product contains the essential nutrients necessary to help guard against carpal tunnel syndrome: Coenzyme Q₁₀ - Improves tissue oxygenation. Vitamin B complex and Vitamin B₆ (pyridoxine) - essential in nerve function. Butcher's broom - Helps to relieve inflammation. Capsicum - Relieves pain and is a catalyst for other herbs. Ginkgo biloba - Helps improve circulation and aids nerve function.

In Process: Not Nice to Aging™ - This product contains stabilized human growth hormone to fight aging.

In Process: Not Nice to Kidney Stones™ - This product contains the essential nutrients necessary to help guard against calcium kidney stone development: Inositol hexaphosphate (iP6) - Has been proven in many studies to prevent and treat kidney stones. Magnesium citrate - Reduces calcium absorption; can lower urinary oxalate (a mineral salt common in kidney stones). Vitamin B₆ - Reduces oxalate when taken with magnesium. To hasten this healing process, take 20 - 30 drops of liquid (extract) of hydrangea root in a cup of organic apple juice daily until relief is obtained. You should also add 20 - 30 drops of gravel root extract in the organic apple juice. The apple juice, gravel and hydrangea roots are stone dissolvers, Vitamin B₆ and magnesium oxide help prevent stones from forming.

How to avoid kidney stones: Drink at least eight 8-ounce glasses of distilled water a day. Reduce your intake of oxalate-rich foods, such as nuts, leafy greens, beets, cola drinks, chocolate and vitamin C. Avoid calcium-rich antacids. Take diuretics (water pills) to reduce calcium in the urine. If you have an overactive parathyroid gland, it may need to be removed. If you have a high uric acid count or gout, take *allopurinol* daily to help lower your uric-acid level. Note: Almost 70% of all kidney stones contain calcium, but the real villain is oxalate, with which calcium combines to form stones. So, if you are vulnerable, maintain a normal calcium intake, but cut down on oxalate-rich foods and excess vitamin C which converts to oxalate. German doctors recommend that you drink a bottle or two of beer at least every other day.

Some other causes of calcium kidney stones are:

- *Prolonged bed rest.* Calcium leaks out of the bones and gets into the urine, facilitating stone formation.
- *Hyperparathyroidism.* An excess of parathyroid hormone raises the amount of calcium in the blood, which passes into the urine, causing stones.
- *Excess absorption of calcium from food.*
- *Too much vitamin D (more than 1 gram a day) or C (more than 200 mg a day).*

In Process: Not Nice to Termites™, but nice to people, homes and pets comes as a kit with monitoring stations and 2 termite predator mite stations. This commercial, safe kit makes termite control a simple do-it-yourself project. (Call 1-800-221-6188 for ordering information.)

In Process. Not Nice to Weeds - This product is a non-specific weed control product that should not be used in the garden.

In Process. Safe Solutions, Inc. Concentrated Enzyme Cleaner - In powdered form is an exceptional cleaner that can be diluted 1 - 600 parts to clean and control insect pests. Be sure to follow the label directions. Safe Solutions, Inc. #2 Preformed Enzyme Cleaner is a blend of several enzymes and surfactants in a liquid form. **Note: Read Stephen L. Tvedten's U. S. Patent No. 6,663,860 regarding the use of enzymes/surfactants for pest control.**

Institute of Pest Management, Inc. is a corporation specifically dedicated to creating a group of trained pest control people to use the materials in this manual and to research and develop ongoing improvements to safely control pest populations. (Call 1-800-221-6188 or e-mail: steve@getipm.com for information.)

Safe Solutions, Inc. Food-Grade Diatomaceous Earth (DE) - has been properly milled and is mined from the fossilized silica shell remains of unicellular or colonial algae or one-celled pytoplankton in the class Bacillariophyceae, better known as diatoms that converted the silica they ingested to form their shells. Diatoms are animals that are related to the crustaceans of today. They produced shells that are now ground up and used as a powder or dust for insect control. Food-grade DE has other uses including cleaning and polishing metal and soaking up spilled oil and grease. **See Chapter 11 for uses.**

Safe Solutions Insect Repellent - Made of 100% EPA exempted ingredients.

Tangles R Gone® hair conditioner was specifically developed to be used in combination with Lice R Gone®.

Clean-Flo Aeration System - This is a system that has actually restored lakes and other bodies of water for over 30 years. Check out the story on this and other items on the Author's web site at <http://www.getipm.com>.

Enzyme Notes: Take corn with 15% moisture or less and spray it with 1% protease enzyme or 10% Safe Solutions, Inc. concentrate and then dry again, or take black strap molasses (the kind used for fermenting) and add 1% liquid protease enzymes or 10% Safe Solutions, Inc. Enzyme Cleaner and you will have several all purpose insect baits. The Safe Solutions, Inc. enzymes eat the food supply of the algae and mosquito larvae and eat the muck, giving you safe and effective algae, mosquito and muck control. Sewage can be digested with Safe Solutions, Inc. Enzyme Cleaner; use 2 parts per million when sewage is 250 parts or less; use 4 parts per million when sewage is 500 parts or less; then aerate with Clean-Flo. **Never irrigate recently fertilized plants with diluted enzyme water. If you irrigate plants or lawns with enzyme water, do not fertilize for at least two weeks. This combination of enzymes and fertilizers acts like a herbicide.**

List of other trademarks that are the exclusive property of Stephen L. Tvedten:

Critter Cap, Dine-O-Mites, Fungisafes, Get Set Grow, Intelligent Pest Management, Kleen Kill and/or Kleen 'Em Away Naturally, Chalk De-Fence, Not Nice to Arthritis, Not Nice to Bugs, Not Nice to Dust Mites, Not Nice to Odors, Not Nice to Skin Irritations, Not Nice to Fire Ants, Not Nice to Fleas, Not Nice to Stinging Insects, Not Nice to Lice, Not Nice to Scabies, Not Nice to Toxins, Not Nice to Critters, Pesticides & Design, Pestisafes, Walk-the-Plank, LiceRGone, Prescriptive Nutrients, etc.

List of copyrighted and registered materials that are the exclusive property of Stephen L. Tvedten:

The Best Control or What the Bugman Doesn't Want You to Know (an Intelligent Pest Management Manual), The Best Control Short Form - First Strikes by Housekeeping/Maintenance, The Best Control II, The Bug Stops Here, Get Set Integrated Pest Management - IPM

Swimming Pool Maintenance - The Author has found that if you add 50# of disodium octoborate tetrahydrate to 17,500 gallons of swimming pool water, he does not have to add any other chemicals in a swimming pool, and people with MCS can swim in the water.

Acids used as herbicides - When you use an acid (strong vinegar, citric acid, etc.) and take the soil pH down to 3, this is a level at which plants simply can not survive. It may take a few months to kill extremely hardy plants, blackberries and brush, but once they die, nothing will grow in that area for at least a year or until you treat the acidic soil with lime.

Enzyme Cleaners used for Pest Control - Please read U. S. Patent No. 6,663,860 to see Stephen L. Tvedten's patented process: http://www.safesolutionsinc.com/Tvedten_Biological_Pesticide_Patent.pdf

Light Traps - You can control June bugs by suspending a light bulb, such as a work light about a few feet above a large basin of water, such as a baby bath or a child's splashing pool, and adding a small amount of soap. At night the bugs are attracted to the light, fall into the water and drown. You can get rid of hundreds of potential

egg-laying bugs each night during the 2-week period when they are flying. There is basically no cost to you and no harm done to the environment. You can use this same trick inside or outside to control flying ants, lady bugs, swarming termites, cluster flies and any pest attracted to light. Inside you can use a goose-neck lamp over a pail or basin of soapy water. **Be extremely careful not to get electrocuted - water and electricity do not mix!**



“People who have been privileged to contribute something to the advancement of science should not let (arguments about priority) becloud their joy over the fruits of common endeavor.” – Albert Einstein

Safe Solutions, Inc.
Various Enzyme Cleaners

1. **What is the function of the surfactant blend in the enzyme cleaner?** The surfactant blend serves to emulsify organic contaminants. This action helps to reduce fatty particle sizes, and breaks apart surface accumulation of oily materials. In doing so, a greater total surface area of the organic contaminant results. This enables the enzymes to rapidly enhance the indigenous bacteria to synergistically act upon these contaminants.
2. **What is the function of the protease enzyme base in the enzyme cleaner?** The protease enzymes and act as a catalyst. These catalysts accelerate the natural chemical chain reaction process without changing the extent or final result of the process.
3. **What is the optimal storage situation for the enzyme cleaners, and what are their shelf lives?** It can be stored at ambient conditions or refrigerated. It is not recommended that the product be exposed to prolonged temperatures above 120°F, direct sunlight, or that it be allowed to freeze. Shelf life of enzyme cleaners is related to its storage conditions, but under optimal conditions shelf life may exceed one year. Refrigeration will prolong shelf life. Always keep the container of enzyme cleaner tightly closed when not in use. Strong acids, bases, oxidative agents and quaternary disinfectants may inactivate the enzymes.
4. **How “SAFE” are the enzyme cleaners?**
 - Non- Hazardous
 - Non-Bacterial
 - Non-Corrosive
 - Bio-Degradable
 - Non-Toxic
 - Non-Flammable

Since enzyme cleaners are designed to be incorporated into water at very low levels, - its introduction into the environment will not normally create an unsafe situation. All regulated components of the liquid enzyme cleaners have been rigorously tested for human safety, biodegradability and aquatic safety using the guidelines listed below (**Note: The following is only true if protease enzymes are kept at or below 1% of the formulation and the mixture is stabilized with a normal pH.**):

- **FDA** (Food and Drug Administration) GRAS (GENERALLY RECOGNIZED AS SAFE) LIST, parts 184 and 186.
- **USDA** (U. S. Department of Agriculture) FSIS (Food Safety and Inspection Service): Regulated components have been authorized for use in federally inspected meat and poultry plants.
- **EPA** (Environmental Protection Agency): Biodegradability tests 40 CFR, Parts 796-3100 to 796-3360 confirms all regulated components are “READILY BIODEGRADABLE”.
- **Standard Methods for the Examination of Water and Wastewater** demonstrates a “LOW LEVEL OF AQUATIC TOXICITY” due to the regulated components classification for biodegradability..
- **Acute Mammalian Toxicity Studies** on regulated components shows “LOW TO NO TOXICITY” levels. Please refer to MSDS.
- **OSHA** (Occupational Safety Hazard Association): Hazard Communication Standard CFR Title 29 1910.1200 “NON HAZARDOUS”
- **FDA 21 CFR** (176.170 & . 180) (178. .340 & . 3910) (180.1 001 c & e) (181.30) (182.99) (582.99) Regulated components may be used in the manufacture of articles or components of articles intended for use in producing, manufacturing, packing, processing, preparing, treating, packaging, or holding food. Please refer to MSDS.
- **CWA** (Clean Water Act) regulations define the regulated components as “NON HAZARDOUS”.
- **SARA** (Superfund Amendments and Reauthorization Act of 1986 Title 111) Regulated components are under levels that require reporting or do not contain toxic chemicals.
- **CAAA** (Clean Air Act Amendments of 1990) Pursuant to Section 611 per 40 CFR Part 82, these regulated components do not contain or were not directly manufactured with any Class I or Class II ozone depleting substances.
- **RCRA** (Resource Conservation and Recovery Act) per 40CFR 261, should a regulated component become waste, it would be “NON HAZARDOUS”.

According to qualified experts all of the components fall under six or more of these guidelines and therefore are generally recognized as safe (GRAS). Even so, in their concentrated form, enzyme cleaners, especially dry concentrates, can possibly cause irritation to the lungs, skin and eyes and should be handled with care. Never taste or swallow enzyme cleaner products. (Please refer to the MSDS.)

5. **TSCA Information:** All regulated components of enzyme cleaners are listed in the Toxic Substance Control Act of 1970.

6. DOT Information: Enzyme cleaners are classified in the National Motor Freight as follows:

- I-48580 S/3 Class 55..Scouring or Washing Compounds. NOI; or Soap, NOI: Liquid; See Notes, Items 48582 and 48584,
- In barrels, boxes, kits, pails or packages 602, 1333, 2039, 2213, 2289, 2341, 2355, 2387, 2393, 2399, 2440, 2453, 2467, 2473, 2478, 2479 or 2500.
- Items 48582 - Note: One Hand Applicator may be included in the same shipping container for each inner container, or one dipping basket only may be included in each barrel, kit or pail. Weight of hand applicators or dipping baskets must not exceed 10% of the weight upon which charges are assessed. Items 48584 - Note: Soap or compounds may contain not to exceed one percent bluing or whitening agent.
- In relating enzyme cleaners to the American Trucking Association Handling Hazardous Materials handbook, it is found that this product can be shipped as Non-Hazardous and Non-Toxic.

Enzyme cleaners must meet all the following safety criteria:

1. They must contain less than 1% protease and should only be manufactured in a “Food Grade Plant” that is inspected regularly by the Food and Drug Administration (FDA) and the plant has never failed an inspection.
2. They are manufactured using state-of-the-art techniques encompassing Good Manufacturing Practices (GMP).
3. The basis for the enzymes consist of all food-grade components; the other components are FDA Generally Recognized As Safe (GRAS).
4. The products do not contain any known “endocrine disrupters”. Specifically it does not contain any nonyl phenols or octyl phenols.

These cleaning products are not normally regulated by the Food and Drug Administration (FDA) or the United States Environmental Protection Agency (EPA) as long as their uses and the claims made by their manufacturers for their uses do not require their regulation. The products may be regulated by the United States Department of Agriculture (USDA) on a site by site basis when used in USDA inspected plants. They have never been rejected for use by a USDA inspector. This is due to the fact that all components are either Food Grade or GRAS, and when the products are used according to the manufacturers and USDA guide lines they are considered safe.

ENZYME CLEANER NOTE: Hot water (120° F.) makes this product more effective than room temperature water in cleaning and/or in controlling pest problems. When the enzymes are old, or the formula changes, often the dilutions will have to be adjusted.

U. S. Patent Note: Read Stephen L. Tvedten’s U. S. Patent No. 6,663,860 regarding the use of enzyme/surfactant mixes to control pest problems.
http://www.safesolutionsinc.com/Tvedten_Biological_Pesticide_Patent.pdf

Worried about your drinking water?

While experts agree we have unsafe drinking water, they disagree as to the extent of contamination in ground-water (from wells) and surface water (from lakes and rivers). Our government spends a lot of time “thinking” about the contamination, but does very little else about it.

Trickle-down pesticides and herbicides are among the worst sources of the worldwide water contamination problem. Further contamination may be due to heavy metals such as mercury, lead, cadmium and nickel, asbestos, radon, road salt, leaking gasoline storage tanks, or industrial wastes that seep into the water table. It may also be due to bacteria, viruses or all of the above.

As a matter of fact, city water usually is treated with chlorine - a poisonous, yellow -green gas – as protection from bacteria. Chlorine treatment does a good job of keeping cholera, dysentery and typhoid under control, but it does not eliminate toxic chemicals, pesticides, herbicides and volatile organics that may be in your water. Yet, chlorination poses another health problem. The chlorine mixes with other pollutants in the water and creates additional, more dangerous compounds. Chloroform, a known carcinogen, is one of these. Chloroform belongs to a family of chemicals known as trihalomethanes (THMs). They are the most common contaminants found in water supplies.

As if we didn't already have a drinking water problem, a new national health alert concerning drinking water was revealed January 16, 2000. A little known chemical, MTBE, which was being used as an octane booster since 1990, has been contaminating wells from leaking gasoline storage tanks in as many as 49 states. MTBE is turning up in lakes and underground aquifers and in 20% of the nations urban wells, forcing some cities to shut down local water supplies. "...it takes a lot less than a gallon (of MTBE) to ruin a (cities) water supply," according to CBS news program "60 Minutes", which aired January 16, 2000.

Since unsafe water data is surfacing as swiftly as water contamination, it is up to each one of us to take action in the most obvious place—our own faucets, for purified water to drink, and at our own garbage cans, by practicing safer waste disposal habits.

Hydrogen Peroxide in the Kitchen and Garden

Oxygen Health Therapies by Nathaniel Altman noted: To make $\frac{3}{4}$ pint of 3 percent hydrogen peroxide solution using 35 percent food-grade hydrogen peroxide, mix 1 ounce of 35 percent hydrogen peroxide into 11 ounces of distilled water. If you spill food-grade hydrogen peroxide on your skin, rinse immediately with warm water and avoid contact with eyes. When you store hydrogen peroxide in the refrigerator, clearly mark the container so you do not mistake it for water.

To clean vegetables and fruit, add $\frac{1}{4}$ cup of your 3 percent hydrogen peroxide mixture to a sink filled with cold water. Wash the vegetables thoroughly, rinse and drain. Either consume the vegetables immediately or pat dry and store in the refrigerator. Another method involves spraying the fruits and vegetables with the 3 percent mixture of hydrogen peroxide. Rinse with cold water and drain. This process is said to prolong freshness.

For washing dishes in an automatic dishwasher, add 2 ounces of 3 percent hydrogen peroxide to your regular washing formula. You can also keep a spray bottle of your hydrogen peroxide solution in the kitchen to be sprayed on countertops and appliances. It will disinfect surfaces and will also give the kitchen a clean, fresh smell. This process can also be used to freshen the refrigerator and children's lunchboxes.

Some farmers are reported to have used hydrogen peroxide on their crops. For foliar feed crops, add 16 ounces of 35 percent hydrogen peroxide to 20 gallons of water. Spray on plants early in the morning, while the plant pores are open. This should be enough to spray one acre of crops.

To facilitate seed germination, add 1 ounce of 3 percent hydrogen peroxide into a pint of distilled water. Soak the seeds for 8 hours. This method is reputed to increase the rate of seed germination by 30 percent.

To make plant insecticide, mix 8 ounces or more of 3 percent hydrogen peroxide to 1 gallon of water with 8 ounces of molasses or white sugar. It has been found that blackstrap molasses works better than sugar; it seems to

allow the mixture to better adhere to the plant.

To increase the growth of plants, add 1 ounce of 3 percent hydrogen peroxide to a quart of water (or add 16 drops of 35 percent hydrogen peroxide to 1 quart of water). Water or mist plants with this solution. Good results can even be seen by adding just a tablespoonful of 3 percent hydrogen peroxide to 1 gallon of water. Farmers are also watering the ground around fruit trees, adding 6 to 8 ounces of 3 percent H₂O₂ to a gallon of water, which can also be used as a spray. To increase the longevity of cut flowers, add a few drops of 3 percent hydrogen peroxide per cup of water.

Tropical fish enthusiasts have found that adding a maximum of 1 ounce of 35 percent food-grade hydrogen peroxide to 20 gallons of water will help disinfect the aquarium water and reduce fungal growth on fish.

Hot Peppers - e.g., chili piquin or habenero chiles can be placed in vinegar; add a little salt and seal for at least a week; then strain and use it as a spray and/or "paint" wood to repel horses, rodents, termites, snails, reptiles and other pests.

The Vinegar of the Four Thieves a/k/a Grave Robbers' Blend - Our Toxic Times Issue No. 128, Care2 Ask Annie by Annie Berthold-Bond reported: During the time of the bubonic plague or Black Death, a family of perfumers robbed the dead. As perfumers they knew well the antiseptic essential oils, and they infused them on their bodies; by doing so they protected themselves from certain death. The doctors of the time used the same herbs and essential oils to protect themselves while tending so many who were contagious. They wore big cloaks over their heads that reached down well below their shoulders. Attached to the cloak over the nose and mouth was a 10" long canoe-like shaped beak full of antiseptic herbs and essential oils. Here is the famous vinegar recipe: Place a small handful each of lavender, rosemary, sage, rue and mint in a large jar and cover completely with organic apple cider vinegar. Cover tightly and set for six weeks. Strain into a spray bottle. Spray the powerfully antiseptic vinegar recipe in areas of concern, such as on cutting boards and door knobs, always making sure to avoid your eyes.

SODIUM LAURYL SULFATE (SLS). Sodium lauryl sulfate (SLS) is considered to be a safe and superior foaming agent and anionic surfactant naturally derived from coconut oil. SLS has a long history of safe use in a variety of consumer personal care products including shampoos and toothpaste. SLS is considered to be GRAS. Safe Solutions use SLS in several of our products because of its superior foaming properties, its ability to properly disperse the various ingredients, its easy and thorough rinsing abilities and its pleasant lather. The Author believes it is the best choice due to its long history of safe use, its lack of odor or taste, and the Author believes SLS (especially as he recommends its use) will not cause any unreasonable adverse effects to human health or the environment.

What are the risks? We are well aware of the widespread Internet rumors regarding SLS and its use in shampoos, soap, and other products. We are concerned about the safety and efficacy of our products, so we take these rumors seriously. Specifically, we have heard claims that SLS is linked to cancer, cataracts, liver or kidney damage, and other maladies. These widespread rumors have recently been investigated by respected publications such as *The Washington Post* and *The Berkeley Wellness Newsletter*, both of which have called them a "sham" and a "hoax." The American Cancer Society also created an information page debunking the claims:

http://www.cancer.org/docroot/nws/content/nws_2_1x_debunking_the_myth.asphas

So rampant are these rumors that they are even addressed on the "Urban Legends" web site: <http://www.snopes.com> under the "toxins du jour" heading, which provides additional reputable sources of information about SLS research. We, too, have researched these claims and have found them to be completely unsubstantiated. As formulated for cosmetic use, SLS has not been found to cause cancer in any recognized scientific research studies. When used in shampoos and soap base, SLS has limited contact with the skin and is then rinsed off. At the levels used in our products, SLS has no known toxicity — not even when ingested.

SLS as an EPA Pesticide - Human Health and Environmental Assessment. Sodium lauryl sulfate is among those pesticides for which EPA believes a broadly reduced set of generic data requirements is appropriate for reregistration. The Agency therefore has waived most generic data requirements with the exception of studies that are considered essential, including additional information about chemical purity and product chemistry studies. In evaluating sodium lauryl sulfate's potential risks to human health and the environment, EPA relied on information commonly available in scientific literature.

Sodium lauryl sulfate is a detergent-like substance that employs a nontoxic mode of action in controlling fleas and ticks on household pets. The potential for dermal and/or inhalation exposure exists to people applying the health risk concern. Published reports suggest that sodium lauryl sulfate has low acute mammalian toxicity and no known chronic effects. EPA has no reports of adverse effects resulting from its use. Both exposure and health risks to people using the product are expected to be low.

EPA also believes that since the pesticide is used only on pets, negligible exposure to the environment and to nontarget organisms will result. The Agency concludes that the registered product and use of sodium lauryl sulfate should not result in unreasonable adverse effects to human health or the environment.

Additional Data Required: Although EPA has waived most generic studies, the Agency is requiring additional details about the chemical characterization of the sodium lauryl sulfate used in the formulated product. EPA also is requiring product-specific data, including product chemistry, acute toxicity and efficacy studies, as well as revised Confidential Statements of Formula and revised labeling, for reregistration

Health Potential: This chemical has also been proven to be rather effective in the prevention of spreading specific STDs/STIs. The chemical has been shown to provide levels of protection against HIV, chlamydia, herpes type 1 and 2, and gonorrhea. This has thus far been proven on laboratory mice and is currently being tested on women, in the form of a microbicide liquid, in clinical trials. Sodium lauryl sulfate may one day be used as a mainstream way of preventing the spread of these diseases in humans.

Kudzu Controlled by a Fungus - (from IOBC NRS Newsletter, Vol. 23, No. 1) A fungus from the sicklepod plant, *arabis canadensis*, found in the southeastern United States, effectively controls kudzu...Both greenhouse and field studies have shown the fungus *Myrothecium verrucaria* to be lethal to kudzu...It proved to be 100 percent effective in controlling this fast growing weed...And even though the fungus can injure and kill soybean plants, proper timing and application techniques minimize injury.

If you have a pest or environmental problem that is not being corrected by current methodologies or you want a safer answer, contact Stephen L. Tvedten at 1-800-221-6188.

Safe Solutions Enzyme Cleaners can be purchased from Safe Solutions, Inc. at 1-888-443-8738. Not Nice to Bugs[®], Not Nice to Weeds[™], Not Nice to Toxins, Not Nice to Arthritis, Safe Solutions, Inc. Insect Repellent[™] Bugs R Gone[®], Lice R Gone[®], Tangles R Gone[®] and/or Safe Solutions Grass of the Sea[™] and/or Safe Solutions Food-grade DE, Bentonite Clay and/or Foot Pads can also be purchased from Safe Solutions, Inc. at 1-888-443-8738, web site: <http://www.safesolutionsinc.com>.

There are also numerous dealers that sell these cleaners and/or pestisafes[®] and/or detox products. None of the above-mentioned cleaners are sold as "registered" pesticides.

The human body is not normally afflicted by disease. Poisons come into the body from food, water, living habits, air and various other sources. These poisons, whether "registered" or not, often remain in the system and cause a reaction, namely disease or death. To deny this is to deny common sense. The Author knows of several detoxification products, e.g., Not Nice to Toxins, Grass of the Sea, Safe Solutions, Inc. Bentonite Clay and Foot Pads for you to use to help cleanse your body. See Chapter 40.



Anyone that dares to discover or invent revolutionary discoveries for the welfare of mankind is attacked as a “quack”. On page 206 of Great Scientists by Gordon Ross, we read, “His opponents called (Louis) Pasteur a circus performer, a charlatan and a clown. Pasteur bore all this continually with a patient smile. ‘A man of science’, he explained to his wife, ‘should think of what will be said of him in the coming centuries, not of the insults or the compliments of the present day.’” Anyone that challenges “thinking” or “sound science” of his day will become the center of storm and controversy.

Time is too slow for those who wait,
Too swift for those who fear,
Too long for those who grieve,
Too short for those who rejoice,
But for those who love, time is eternity.
— Henry Van Dyke

WARNING: There is nothing that is absolutely safe for everyone. People the Author knows react to peanuts and milk. Therefore, it is up to you, dear reader, to protect yourself. Always use the safest solution for you and yours! Always test a small area before you treat the total or entire area! Think before you act! Read all of the directions and warnings before you spray/dust/use anything!



*Safe Solutions products may be purchased online at:
<http://www.safesolutionsinc.com>
or by telephone at:
1-888-443-8738.