Green Gimmicks for Greenbacks

Olivia James

Its manufacturer calls it safety freeze. That's because Sierra Antifreeze substitutes propylene glycol for ethylene glycol, the major ingredient in conventional antifreeze. Sierra Antifreeze is just one example of the burgeoning trend to use "environmentally friendly" ingredients in a wide range of products ranging from antifreeze to solvents to paint strippers to pesticides.

The "green marketing" push began in the late 1980s and has continued, tapping in on consumers' concerns about not only protecting the environment but also about using products reputed to be safer and less toxic than traditional chemical alternatives. But just how much of this marketing is valid and how much is simply an attempt by manufacturers to cash in on consumer concerns? Answering that question is not easy.

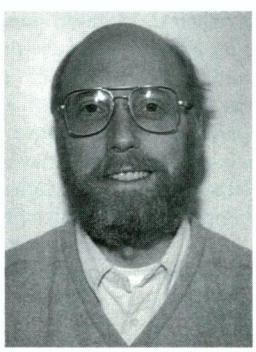
Poison control centers around the country handled more than 3,500 cases of ethylene glycol exposure in 1993, the most recent year for which statistics are available. If swallowed, ethylene glycol can cause severe kidney damage. Propylene glycol, on the other hand, is on the FDA's GRAS (Generally Regarded as Safe) list and is used in small quantities in a variety of foods and confections. However, propylene glycol can cause temporary grogginess and nausea. Although the American Association of Poison Control Centers doesn't list cases of exposure to propylene glycol, it does report that in 1993 poison control centers handled 1,446 cases of exposure to glycols other than ethylene glycol.

So just what is meant by "environmentally friendly" or "environmentally safe"? "It's really hard to make a sweeping generalization, it's such a wide category of products and product changes," said Ned Groth, director of technical policy and public service at the Consumer's Union.

"There is a valid concept buried in here. The concept is designing products that have minimum health hazards associated with their use and minimum adverse environmental impacts," says Philip Dickey, director of the Household Toxics Project of the Seattle-based Washington Toxics Coalition.

But Dickey warns that specific criteria are needed for the concept to have any real meaning. Looking at household chemical products, such as cleansers, he ticks off a number of factors which have to be considered. "You could look at things like the toxicity of the product through various routes of exposure, such as accidental ingestion or inhalation; potential for skin irritation or damage; long-term health implications; whether the product is chemically reactive; that is, is there a potential for accidents by mixing the product with other household products?" he says.

Citing the example of Sierra Antifreeze, made by Safe Brands of Omaha, Dickey notes that while the product itself is less toxic than conventional antifreeze, there are other factors to consider.


Green Seal

Arthur Weissman—An environmentally friendly label can give products a competitive edge.

"My concern with that product is that people will want to buy a less toxic product, but then they may be under the illusion that the spent material that comes out of the car is so harmless they can dispose of it any way they want to," he says. After any antifreeze is flushed from a car's radiator it can be hazardous, since it becomes contaminated simply by being used.

"There are heavy metals [in used antifreeze] which become contaminants. Heavy metals have been implicated in nerve damage, kidney and liver damage," says Jon White, chief of the Environment and Product Safety Section of the Wisconsin Department of Agriculture, Trade and Consumer Protection.

Government Regulations

Concern about protecting the environment and human health has spawned manufacturers to develop more benign products (as well as marketing claims), which in turn has spurred government efforts to investigate such claims to make sure that consumers aren't misled.

In the late 1980s the Federal Trade Commission began examining so-called green claims and in 1992 issued guidelines to regulate them. Since 1992 the FTC has brought 28 orders against companies that have used misleading or deceptive advertising claims to tout their products' "environmentally friendly" characteristics.

For instance, in 1994 the FTC forced Orkin Exterminating Company, Inc. of Atlanta to stop advertising that "its lawn care pesticides are as safe as some common household products such as suntan lotion or shaving cream" and that the "pesticides when used as directed are practically nontoxic and do not pose a significant risk to human health or the environment" unless Orkin

had scientific evidence to back up the claim. The FTC charged Orkin had no reliable scientific evidence to substantiate those claims.

Though the FTC guidelines governing the use of green claims do not have the force of law, they are designed to help companies conform to legal requirements on advertising, labeling, and other forms of consumer marketing.

"The commission looks at advertising in terms of what is conveyed to consumers. The commission looks at all reasonable interpretations that consumers may take from the claim and in each case the advertiser has an opportunity to substantiate all such reasonable interpretations. The intent of the manufacturer is not an issue. The only issue is what message the consumer takes and whether or not it can be substantiated," says FTC attorney Michael Dershowitz.

The 1992 guidelines governed several environmental marketing terms including "recyclable," "degradable," and "environmentally friendly." Essentially, the commission required manufacturers to be able to substantiate these claims with "competent and reliable scientific evidence."

While the FTC monitors advertising claims, another government agency, the Consumer Products Safety Commission, monitors warning labels on products. Such labels describe the hazards products might pose, whether consumers should avoid inhaling or swallowing the products, and what should be done in such cases.

"We're concerned with the hazards that are associated with the product. The cleaners are usually, but not always, eye irritants or skin irritants," says Mary Toro, a CPSC compliance officer.

States are also actively checking into green claims made by manufacturers. An ad hoc task force of nine state's attorneys general began examining green claims in 1989. It was this effort which led to the FTC's 1992 guidelines. The task force, which now includes 11 states, remains active in bringing actions against manufacturers making unsubstantiated green claims. For example, in 1991, task force actions led to several companies each paying $50,000 to 10 states for making unsubstantiated and confusing claims that their products were "ozone friendly" or "ozone safe."

According to the settlement with one company, while the hairspray it made did not contain chlorofluorocarbons, which deplete the stratospheric ozone layer, it did contain volatile organic chemicals, which contribute to the formation of ground-level ozone, which can impair breathing.

"There is definite overlap between the FTC and the task force," says Wisconsin Assistant Attorney General Barbara Tuerkheimer, that state's representative to the task force. However, she said efforts between the two have been cooperative, with states deferring to the FTC or vice versa on occasion.

Private Vigilance

Government regulators are not the only ones evaluating green claims. Private groups are also active in the area. The Council of Better Business Bureaus works to keep manufacturer's advertising truthful. Last year the CBBB's National Advertising Division objected to Sierra Antifreeze's slogan, "Don't give me another toxic antifreeze, give me something different," because it implied that Sierra was completely nontoxic. As a result of the objection the slogan was dropped, according to division spokesperson Lynne Collins.

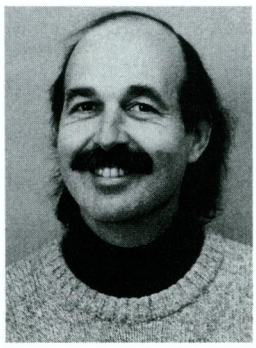
Some private groups are also involved in product evaluation. Green Seal, a five-year-old Washington, D.C.-based nonprofit organization, tests products to see if they are legitimately "environmentally friendly."

"That's not the mission of the FTC or the Consumer Products Safety Commission," says Arthur Weissman, Green Seal's vice president of standards and planning. "The FTC guidelines are to ensure that the claims made by manufacturers are truthful, accurate, and nondeceptive. That doesn't tell a consumer whether the product with the claim is overall better than other products they find in the market. "

Working with a variety of authorities, including industry experts and independent scientists, Green Seal develops its own protocols to assess a class of product's environmental impacts and contracts with Underwriters Laboratory in Chicago to determine if products meet those standards.

The process of earning Green Seal's approval is both voluntary and confidential, Weissman says. "If a company's product doesn't meet the standard it can learn how to improve the product; if it does get the seal, it should attract a large percentage of consumers who want to do things right environmentally in the marketplace. And the theory is the manufacturer gains a competitive edge in the market," says Weissman.

The Washington Toxic Coalition's Household Toxics Project has evaluated items ranging from adhesives to toilet bowl cleaners by comparing information from product labels, federally required material safety data sheets, toxicology texts, and manufacturer brochures to arrive at ratings ranging from "lowest toxicity and environmental impacts" to "highest hazard." And Scientific Certification Services of Oakland, California, has been independently verifying manufacturers' environmental claims since 1990. For products that meet the manufacturer's claims, SCS will provide a statement on the package that the product meets the maker's claim.



Washington Toxics Coalition

Philip Dickey—Green product claims may be meaningless in terms of safety.

But the effort to check such claims, as they affect health, is a rather small one. "Many of them will slip through the net and not be subject to verification in any way to let the consumer know that what they say is true," says Michael McCloskey, chair of the Sierra Club. "I think probably in the majority of cases environmental groups and consumers have no way of knowing whether the claims are true."

The terms that are bandied about by manufacturers provide little help. For example, the term "nontoxic," which is frequently found on labels and in product advertising, sounds simple but may hide multiple meanings. Dickey notes that the term doesn't tell consumers whether acute or long-term toxicity is being described. Also, "nontoxic" is not legally defined in the federal Hazardous Substance Act, though the act does set standards for defining toxicity.

"'Nontoxic' is an interesting claim," says the FTC's Dershowitz. He notes that the commission did not deal with the term in its 1992 guidelines, but may when it reviews them later this year, "since it's become more prevalent. The question is what level of safety is conveyed to consumers and perhaps does it undermine any precautionary statements that are used in conjunction with it that are on the product," he says.

One product that is advertised as nontoxic is a stain remover called "Goo Gone." According the material safety data sheet, the product, a mixture of petroleum naphthas and citrus oils, does not meet the definition of toxicity in the federal Hazardous Substance Act. The label on Goo Gone does, though, still have this warning for consumers: "Harmful or fatal if swallowed. Keep out of reach of children."

"We're still obliged as a manufacturer of . . . a spot and stain remover to warn consumers to still take caution with the product . . . Our product differs from others because it doesn't contain chlorinated solvents. If a child would drink several ounces, they wouldn't have permanent damage," says Scott Zeilinger, vice president of the Magic America Corporation, which makes Goo Gone.

And one toxicologist, when told the contents of the product, praised it. "It's a vast improvement on old-style cleaning agents," said Patricia Field, emeritus toxicology section chief of the State Laboratory of Hygiene of Wisconsin.

Goo Gone is also described as 100% organic, a description that raises questions in the mind of some authorities. "'Organic' is probably misused most of the time. I don't know what manufacturers mean when they say a product contains organic ingredients. At best they don't know what they're talking about, at worst they're out to deceive people," says Dickey. Referring to household cleaners, Dickey says organic may be meaningless in terms of safety. Organic, he notes, can simply mean containing carbon. "Certainly household cleaners contain organic chemicals, but that is by no means an indication of their safety. Organic chemicals include all kinds of toxic things, from PCB to benzene," Dickey says.

Sierra Club

Michael McCloskey—Many green claims may not be verified.

The FTC has not examined the term, though Dershowitz has questions about its meaning and use. "It's something we know is out there. I'm not sure I know what it conveys to consumers. I don't think I'd be remiss in saying that it probably conveys something positive about the product," he says.

Green Products

Among the environmentally friendly products on store shelves are those that use citrus oils as a base. In a concentrated form, these oils, derived from the peels of citrus fruits, are effective as solvents and degreasers, and they are less hazardous than other components of solvents such as toluene and xylene, which can be toxic when inhaled.

But they are not totally benign. Citrus oils can irritate the skin; if swallowed they can irritate the gastrointestinal tract. Warnings of these effects appear on the label of the citrus oil-based solvent Citra Solv. The label also urges "immediate medical attention" if the product is swallowed, gets in the eyes or on the skin. It's also flammable.

As to its efficacy, an examination by *Consumer Reports* magazine in 1993 described the performance of Citra Solv as "worthy, if at an exorbitant price." On an ounce-for-ounce basis it's about three times the cost of conventional cleaners, illustrating that manufacturers believe consumers will pay a premium for green products.

In 1993 Green Seal established standards for household cleaners. Besides meeting a battery of criteria to determine their effectiveness, the cleaners cannot be classified as toxic or highly toxic as defined by the Consumer Product Safety Commission. Green Seal also requires strict limits on the amount of heavy metals in the cleaners. And while the products may have chlorinated organic compounds, they can only be in concentrations that are below 10 times the applicable maximum contaminant levels in the national drinking water standards. Only one cleaner, BCD Ultra Concentrated Cleanser, has been certified by Green Seal.

Green Seal's criteria for paint calls for it to be made without a whole host of toxic ingredients, including benzene, xylene, cadmium, and mercury. Removing such ingredients can reduce exposure to potential carcinogens and lower the risk of liver and kidney damage and eye and lung irritation.

"It's very good to minimize exposure to such compounds in products. It's prudent public health policy," says Ronald White, director of environmental health at the American Lung Association.

Green Seal certification also means the product must be effective. "We do have performance requirements. We don't want a Green Seal certified product to be ineffective. That would frustrate consumers. In the case of paints that don't have good hiding power it will cause consumers to put multiple coatings and totally neutralize the benefits by adding to the VOC [volatile organic compound] levels," says Weissman.

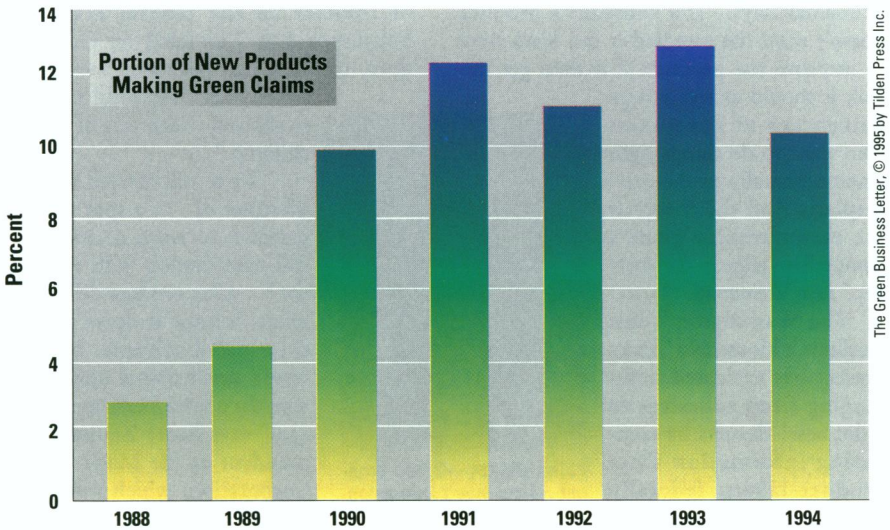
But there may be other trade-offs when some hazardous ingredients are removed. For example, one paint stripper on the market, Safest Strip made by 3M, has no methylene chloride. Methylene chloride is an animal carcinogen and when inhaled can lead to the formation of carbon monoxide in the blood, says Field. But using this water-based product means that paint stripping can take much longer. Safest Strip may take an hour or more to do the job that a conventional stripper could do in 15 minutes, according to 3M. And users should make sure it doesn't get in their eyes, warns the label.

Another manufacturer of household products, SC Johnson Wax, is reformulating a number of its household products to reduce the amount of VOCs. According to the company, its goal is a 25% reduction by the end of the year 2000. Overall the VOC total formula ratio of its products worldwide was down 17% as of 1993, the year for which the most recent data are available. Most of the reduction is in products in Europe and the Americas. However, the percent of VOCs used has actually risen in Africa and the Asian-Pacific region.

Pesticides are also going the environmentally friendly route. According to a 1993 EPA report, toxicity-related claims (such as "no synthetic chemicals") appeared on 22 pesticides and insecticides in 1991.

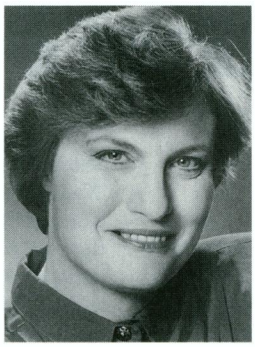
But the value of this claim is dubious, according to Jean Frane, a specialist in the EPA's Office of Pesticide Programs. "If you take it literally, no synthetic chemicals is not necessarily anything that makes it healthier. However, people will read that as meaning no nasty chemicals. No synthetic chemicals means that it is made with natural ingredients that are derived from plants, or things like that. It does not necessarily reflect that those things are not toxic," she says.

Frane goes so far as saying that the EPA erred in allowing such a statement to appear on the labels. "Probably we should have not permitted it. Right now there is an absolute prohibition on making toxicity-related claims," she says. Frane does say, however, that because these products are likely to have a water-based formulation rather than a solvent-based one, they are "more biologi-



cal in nature and therefore are less likely to be a human health hazard."

Some scientists don't see much of a distinction between the safety of natural and synthetic chemicals. "There doesn't seem to be any toxicological reason it should be the case that naturally occurring chemicals are in some way safer than synthetic chemicals. When we look at the chemicals that are tested for carcinogenicity, the proportion that are carcinogenic in rodent studies are similar for natural and synthetic chemicals," says Lois Gold, a biochemist at the University of California, Berkeley.



EPA

Jean Frane—Lack of synthetic chemicals may not mean a product is nontoxic.

Some "natural" products may be quite harmful. Writing in the October 1990 issue of the *Proceedings of the National Academy of Sciences*, Gold and colleague Bruce Ames described how a type of potato bred to be rich in anti-insect toxins had to be withdrawn from the market because these natural toxins were harmful to people.

Gold and Ames argue that many natural pesticides have not been tested for mutagenicity or carcinogenicity and say "their safety compared to synthetically derived pesticides should not be prematurely assumed."

But there are biological methods of pest control that do offer alternatives. According to Janet Andersen, acting director of EPA's new Biopesticides and Pollution Prevention Division, which was established in November 1994, there are slightly more than 400 "active ingredients," or biological pesticides including viruses, bacteria, fungi, and pheromones. Pheromones, for example, are natural chemicals which are sex attractants. Sold as ingredients in products such as Biolure, Pherocon, and Pherotech, pheromones can be used to disrupt insect mating patterns. Andersen, who said the division actively promotes the use of such biological agents because of their safety, acknowledged that they may be slower acting than chemical alternatives and may require more sophisticated management because they are effective against only one or two insects, compared to chemical pesticides that are often targeted more broadly.

Insecticidal soaps are another nonchemical approach to pest control. These soaps, which are harmless to people, says insect specialist Susan Mahr of the University of Wisconsin-Madison, are not effective against all insect stages and must be applied when the insect is actually on the plant to work.

Conclusion

Although it is clear that "green" products are usually less toxic than conventional ones and can perform effectively, it is also clear that products that may pose less of a risk to health are not necessarily benign. Terms such as "nontoxic," "natural," and "organic" are not necessarily synonmous with safety and have yet to be satisfactorily defined. Government agencies are relatively limited in their ability to regulate green marketing claims. And few private groups offer some sort of evaluation of claims which largely depend on manufacturers' willingness to seek product evaluation. For the consumer, the best advice would seem to be to read product labels thoroughly and be skeptical of sweeping claims and undefined terms. As Consumers Union's Groth warns, "*Caveat emptor*": let the buyer beware.

Harvey Black

Harvey Black is a freelance journalist in Madison, Wisconsin.

Erratum

The information following the sentence which begins "Mixtures research . . ."of the Focus article entitled "Strange Brew: Assessing Chemical Mixtures" on page 142 of the February 1995 issue (vol. 103, no. 2) was incorrectly attributed to Victor J. Feron. The correct source of the information is Harold Zenick.

The American Health Foundation is an independent biomedical research organization whose mission is research on specific environmental, nutritional and exogenous factors causing cancer, cardiovascular disease, certain genetic diseases and aging. Synthelabo Pharmaceuticals is a private pharmaceutical company which ranks number five in France. In addition to conducting safety studies, one of its primary concerns is education in drug safety. So, with this common interest, the International Course on the Safety Assessment of Pharmaceuticals was started in 1992.

The Course is designed for veterinarians, physicians, pharmacists and scientists of the pharmaceutical industry in charge of nonclinical studies and those responsible for the registration of new drugs. Participants will receive the scientific information necessary for a good comprehension of the results of nonclinical safety studies. Toxicologists and toxicologic pathologists may also benefit from this course by updating their knowledge.

The Course will be held on May 7–12, 1995 at the Hilton Inn in Tarrytown, New York, which is approximately 30 miles north of New York City. For a brochure and registration card please contact:

Janet Marino
American Health Foundation
1 Dana Road, Valhalla, NY 10595
tel. 914/789-7140 or fax: 914/592-6317.