

Chemical Accident Reconstruction Services, Inc.

February 26, 2004

Via Certified Mail

U.S. Consumer Product Safety Commission
ATTN: Office of the Secretary
Washington, D.C 20207

Re: Petition to Ban Sulfuric Acid Drain Openers

Dear Director:

This is an open letter to the Consumer Product Safety Commission (CPSC), which is also posted on the Internet. The purpose of the letter is to petition the CPSC to ban sulfuric acid drain openers (SADOs) for use by ordinary consumers and to limit SADOs to use by professionals only.

The young child in the photograph below was the victim of an accident involving a sulfuric acid drain opener (SADO) in 2001.



Young Victim of Sulfuric Acid Drain Opener (SADO) Accident

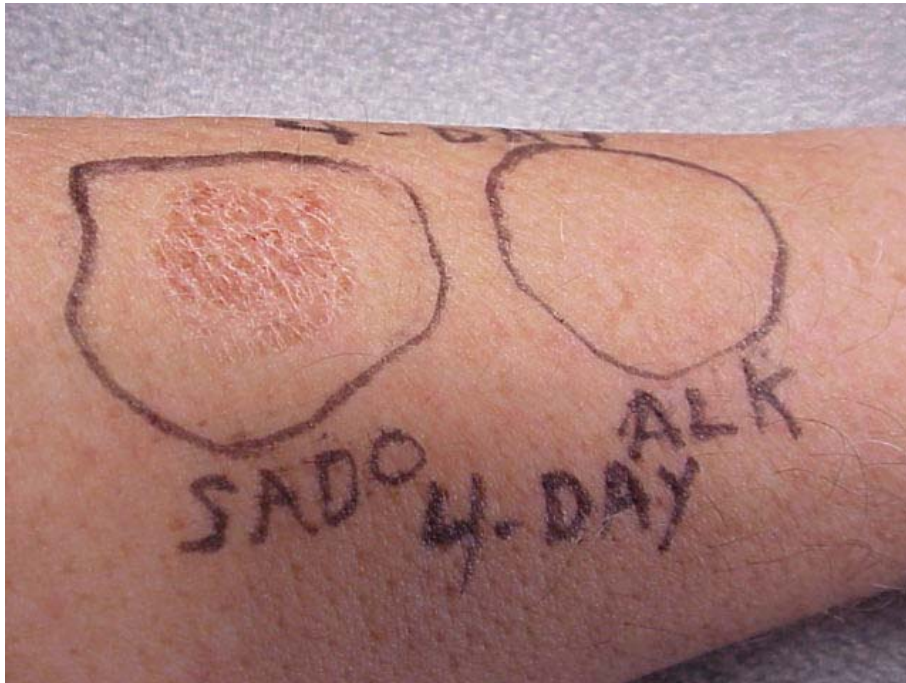
9121 E. Tanque Verde Road #105, Tucson, Arizona 85749
800-MIKE-FOX (645-3369) Fax: 520-749-0861

My involvement in SADO burns as a chemical expert led me to the CPSC's records concerning the petitions, bans and reviews of SADOs by the CPSC. As a result, I have done a considerable review of the CPSC's files, research and decisions in this regard and have attached a more detailed report of my findings. This cover letter is an Executive Summary.

While I agreed wholeheartedly with the Commission's decision in 1978 to limit the use of SADOs to professional use only and to ban it from use by the ordinary consumer, I was extremely disappointed to see the CPSC reverse itself in 1981 and then to again deny a petition in 1996 to keep SADOs out of the hands of ordinary consumers.

At the same time, I believe I understand the Commission's logic. On the surface, it appeared that the percentage of SADO injuries were about the same as its market share of all drain openers. The Commission never said that SADOs were not dangerous. They simply said that SADOs were no more dangerous than alkali drain openers (ALKDOs).

Before I go any further I would like to ask if anyone at the CPSC *really* believes that SADOs are not any more hazardous than ALKDOs. If so, I propose a public demonstration in which I will pour an amount of ALKDO on my forearm while a member of the CPSC pours an equal amount of SADO on their arm. We will then see who heads for the water first and who has the most severe burns. This may seem melodramatic, but I want to get the CPSC's attention on this important matter.



Comparison of SADO vs. ALKDO Skin Contact 4-Day Results

SADO contact time was 25 seconds

ALKDO contact time was 37 seconds

The reason I can make this challenge is that, in addition to seeing the horrific results of SADOs, I have performed the proposed demonstration on my own arm using both ALKDO and SADO simultaneously. I applied the ALKDO first and then the SADO, and then rinsed them both off once the SADO became a serious concern, which was within 25 seconds. The picture above illustrates the results after four days. The SADO produced a burn, which scabbed over, while the ALKDO did not even cause minor skin irritation. There can be little doubt that SADOs are more dangerous than ALKDOs.

The fundamental flaw in the CPSC's logic was to compare the percentage of sales to percentage of injuries. On that basis, it appeared that SADOs were no more hazardous than ALKDOs. In other words, it appeared that the percentage of SADO sales were about the same as the percentage of SADO burns.

However, the hidden flaw in the CPSC's logic was that only 1/3rd of the SADOs were sold to ordinary consumers. The other 2/3rds were sold to professionals. On the other hand, the ALKDOs are primarily consumer products sold in super markets. Since professionals are trained in the use of chemicals (per the OSHA Hazard Communication Standard) they would be far less likely to sustain a chemical injury. In fact, I believe that work-related injuries and intentional injuries were excluded in the CPSC's analysis. When you compare the percent SADO sales to ordinary consumers (3.1%) to the percent SADO injuries (11%) it becomes clear that SADOs are at least 3.5X more dangerous than ALKDOs.

One staff member of the CPSC suggested that the frequency of exposure to ALKDOs might be as high as 280 times as much as the frequency of exposure to SADOs. Hence, one would expect that SADOs should contribute less than one percent of all drain opener burns. Yet, SADOs account for at least 11% of all burns. This suggests that SADOs are at least an order of magnitude more dangerous than ALKDOs.

Instead of maintaining the 1978 ban, the Commission decided to allow the SADO industry, referred to as the Associated Chemical Producers or ACP, make voluntary improvements in packaging and labeling. However, if you look at the injury data following the voluntary improvements, as the CPSC's 1996 review did, it becomes clear that things just got worse.

There were 120 injuries due to SADOs in 1980. In 1981 the ACP stepped in with their improved label, yet the injury rate never went below 120 thereafter. It was 170 in 1982 and other years were all above 200. In 1993 there were 680 SADO injuries. This strongly contradicts any notion that the "improved" labeling by the ACP had any measurable effect on injuries.

Another flaw in the CPSC's earlier process is what I call the "Kleenex Syndrome." If you ask someone for a Kleenex, they might hand you a Charmin Bath Tissue. The problem is that "Kleenex" has become a descriptor for an entire product type. Somewhat

like a “Xerox copy,” even though Xerox is no longer the most common copying machine. Likewise, Liquid Plumber has become a generic term for liquid drain openers. Therefore, the comments section of the National Electronic Injury Surveillance System (NEISS) might say that Liquid Plumber was the cause of a patient’s burns when in fact it may have been another type of liquid drain opener. Since Liquid Plumber is an ALKDO, those burns would automatically fall into the ALKDO column and might be missed as SADO burns without further questioning of the patient. Also, the hospital staff might enter Liquid Plumber in the Comments Section even if the patient said it was some type of liquid drain opener. The patient themselves might be confused and say it was Liquid Plumber. The distinction is not immediately obvious to the ordinary consumer.

Concentrated sulfuric acid is so much more hazardous than the typical 10% sodium hydroxide solutions used in ALKDOs that it simply does not make sense that SADOs and ALKDOs present the same danger. There are at least five mechanisms by which SADOs can damage skin (heat, acid, dehydration, oxidation and sink eruptions) while ALKDOs present the single mechanism of alkalinity. Since people are as likely to spill Coke on themselves as they are Pepsi, they are also equally likely to spill a SADO or ALKDO on themselves. Given the ultra hazardous nature of the SADO compared to an ALKDO, it is simply illogical that SADOs would present the same probability of injury as ALKDOs.

My final comment about SADOs mirrors several comments from some CPSC staff members. It is not possible to label a SADO so as to properly instruct and warn the ordinary consumer about the dangers it presents. Once a consumer gets splashed with a SADO he or she must know what to do immediately. Therefore, the label has to *guarantee* that the consumer will read and understand the label before they use the product and follow all safety instructions to the letter. To my knowledge, there is no such label.

Once a consumer is splashed with SADO, there is no time to then read the warnings or first aid instructions on the container. In fact, anyone who works with sulfuric acid on any regular basis is extensively trained *and drilled* on what to do without thinking in an emergency. Without that kind of knowledge and training the ordinary consumer is helpless. For example, in the case involving the young child pictured above not even the paramedics or police knew how to properly respond to this child’s SADO burns. They were dribbling saline solution on the child when they should have been washing the child with a garden hose full force. Another member of the family who also got sulfuric acid on her skin was not even washed until she got to the hospital emergency room. Instead of washing her with copious amounts of water, the police were questioning her.

There is absolutely no merit to the argument that SADOs are easy to use and offer sufficient economic benefits to offset their risk. It is not a life-saving or otherwise essential chemical product. It is simply a drain opener. There are other, less-risky and less-costly ways to unclog a drain. SADOs can also cause corrosion problems in certain types of plumbing, as well as problems in septic systems.

As discussed in the attached report, the risks of SADOS greatly exceed their benefits. Furthermore, SADOS are ultra hazardous when compared to other economical means to open drains and can also corrode the plumbing systems themselves.

It is my professional opinion, as someone who has spent a good portion of his entire professional life in the field of chemistry, chemical safety and chemical accident investigation that:

- 1) Sulfuric acid drain openers (SADOS) are unreasonably dangerous and should not be sold to ordinary consumers. SADOS can cause horrific injuries and are unsafe when used in a reasonable and foreseeable manner by ordinary consumers. The risk of danger inherent in SADOS greatly outweighs their benefits.
- 2) SADOS should only be sold to professionals who have had the benefit of the training required by the OSHA Hazard Communication Standard.
- 3) If SADOS MUST be sold to ordinary consumers, they should be packaged in one-shot containers, and
- 4) If SADOS MUST be sold to ordinary consumers in one-shot containers, they should not be greater than 84% in concentration in order to provide a (slight) time-based safety factor and to reduce the thermal component of SA injury.

With greatest respect and sincerity, I hereby request that the CPSC reevaluate and reconsider the use of SADOS by ordinary consumers. I am willing to participate in that reevaluation process at no charge to the CPSC.

Please call (800-MIKE-FOX) if you would like to discuss any of the above or the attached report and my willingness to participate in the review process.

Sincerely,

Michael Fox, Ph.D.
Founder
Chemical Accident Reconstruction Services, Inc.