

# **HAZARDS OF TRADENAME PRODUCTS**

**Technical Editor**  
Maureen E. Gannon

**Contributing Editor**  
Marilyn J. Wurth

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**The *Tradenname Pocket Guide* is available  
with the name of your organization  
imprinted on the cover.**

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## INTRODUCTION



“Hey, Sam, make sure those workers painting the stairwells are wearing the respirators the safety officer assigned to them!”

“I’ll be over to supervise as soon as I check on the guys pouring concrete over at parking lot B.”

I want to make sure there isn’t anyone wearing shorts while they’re working.”

“Yeah, I know it’s a warm day, but the cement in concrete can burn your skin.”

Oh, hi! My name is Tony (“Torch”) Martinez. Sorry to keep you waiting. I tell ya, being head of the maintenance department at this plant keeps me real busy. I have to make sure the job gets done, but what’s even more important to me is that my crew is working safely. I have a personal reason, a nice scar, that reminds me how important it is to know exactly what you’re working with.

It was a rainy November day, and I was inside working with a varnish that contained a highly flammable solvent called acetone. Unfortunately, I didn’t find out about this until after my accident. While using the

### **What Is A Chemical Anyway?**

When you hear the word *chemical*, do you always associate it with something that's harmful? Many people think of chemicals as materials that are dangerous and may pose a threat to our health. While it's true that many of the chemicals in our world are harmful, it is equally true that many of them are not. All matter (the "stuff" composing our world) is chemical in nature. Every day our bodies depend on hundreds of different chemicals in our tissues and blood to keep us functioning properly. Chemicals are not just the liquids brought into our work areas in tightly sealed cans, bottles, and drums—they are everywhere in our daily lives. Even table salt and water are chemicals. While many of the chemicals around us are relatively harmless (Hey, water may cause you to resemble a prune if you stay in it too long, but that's about it!), others have hazardous properties that can cause injury, illness, death, or damage to property or the environment if handled improperly. In fact, many hazardous chemicals including gasoline, turpentine, and pesticides are commonly used in and around the home, and are found as ingredients in glues, drain cleaners, spot removers, paint thinners and nail polish remover. Additionally, hazardous substances are frequently used in arts and crafts. Examples include toxic paint pigments and solvents, acids for etching glass, photographic chemicals, and the solders used in jewelry making.

## **How Do Chemicals Enter The Body?**

Chemicals can enter the body through several routes of entry: by *inhalation* (breathing), *skin* or *eye contact*, or *ingestion* (swallowing).

Because anything in the air we breathe will enter the lungs, *inhalation* is the most likely route of entry for chemicals. Inhaled air contaminants can easily enter the bloodstream in the lungs and then circulate through your system. When a chemical enters the blood in this way and spreads throughout the body, this effect is called *systemic*. This means that it does not necessarily produce damage at the site of entry, but may affect other parts of the body. For example, inhalation of methyl chloride gas does not affect the respiratory tract, but it does cause neurological disorders such as dizziness, headache, and incoordination by acting on the brain, and also may damage the liver and kidneys. These are systemic effects. When you take an aspirin for that killer headache you don't stick it on your forehead and wait for the pain to go away (At least I hope you don't do that.); you swallow it and wait for it to act *systemically*. It dissolves in the stomach, is absorbed into the bloodstream, and travels up to your brain where it relieves muscle tension or pressure on your blood vessels.

When a chemical is inhaled and acts directly on the lungs (irritation from acute inhalation of an acid or asbestosis from chronic inhalation of

asbestos fibers), it is referred to as a *local* effect. Inhaled substances can be in the form of dusts, mists, smoke, vapors, gases, or fumes.

*Skin contact* occurs when a liquid or solid chemical directly contacts the skin, or when a chemical in the air (for example, a mist) deposits on the skin. This could result in direct damage to the skin, such as irritation, redness, or blistering, or it may penetrate the skin's pores and many layers to enter the bloodstream (absorption) to cause systemic effects. Corrosive chemicals, such as acids and bases, can burn the skin if not washed off

### **What Is The Difference Between Short-Term and Long-Term Exposure?**

Exposure to a hazardous material for a brief period of time, such as minutes, hours, or several days, is referred to as *acute exposure*. Health effects from acute exposures develop very rapidly. Exposure to a hazardous material over many months, years, or decades is referred to as *chronic exposure*. Chronic effects are particularly dangerous because you may not experience discomfort in the presence of the material, but you may develop severe health problems later in life as a result of your exposure. Think of all the lung disease and deaths that have resulted from exposure to asbestos; those people working with asbestos-containing materials didn't feel a twinge in their lungs every time they inhaled an asbestos fiber, but eventually many of them became very ill. Because of the delay (latency period) between the time you suffer the chronic exposure and the time your health problems become apparent, your exposure incident may be overlooked as a possible diagnostic source for your current condition.

### **Tradenname Products Are The Favorite Disguises of Chemicals**

One of the biggest problems in the workplace today is getting employees to recognize what hazardous chemicals are and how to use them safely and effectively. While it is sometimes hard enough to train employees in a chemical laboratory on how to work safely with *pure* solvents such as benzene and acetone, it becomes increasingly difficult to do so when these solvents are an *ingredient* in a product. Once a chemical is no longer 100% pure and becomes simply an ingredient in another product, it is no longer labeled as that chemical; in effect, it becomes *disguised*. When you pick up a bottle of drain cleaner, the name of the product does not include sulfuric acid or sodium hydroxide, even though one of these chemicals may constitute up to 75% of what is contained in that bottle. Tradenames are used for marketing purposes, and the manufacturer wants to catch your eye with names like “easy clean” or “shine all.” In addition, it would not be possible to list all the ingredients on the front of the label in big letters. Therefore, even though the manufacturer is not deliberately trying to deceive you by using tradenames, you really aren’t aware of what is in the product until you read the label in its entirety.

There are hundreds of cases in the home and workplace where people have sustained serious injuries while using tradename products. Drain cleaners seem to be a particularly big problem. Last year we had a guy, you know one of those “know-it-all” types who thought he didn’t need to pay attention to safety rules and read labels. Yup, he really knew what he was doing. . .or so he thought. Good thing our plant physician was right down the hall or Mr. “know-it-all” could have lost his eyesight! He found out the hard way that splattering frequently occurs, and in several cases the cleaner has been forced backwards out of the drain and into the face of the person using it. Safety glasses just may be a guy’s best friend—the heck with Rover! The sulfuric acid (a strong acid) or sodium hydroxide (a strong

### **How Much Of A Chemical Is Safe?**

O.K., so you took my advice, and now you're looking at the products you use a little more carefully. When you pick up a tube of wood glue to fix a chair leg you read its label, right? You see that it is composed of an 80% polyvinyl acetate base (It's a polymer which is considered

non-hazardous), but also contains 0.1% formalin. You may know that formaldehyde is toxic (formalin is the liquid form of formaldehyde) but since there is only 0.1% of the stuff contained in the glue you disregard any warnings that may be given. You rationalize that such a small percentage couldn't possibly present any real hazard. You couldn't be *more* wrong!

While it is true that the smaller the percentage of a hazardous material in a product the less chance it has of posing a health risk, it does not mean that it poses no threat at all. Formaldehyde (formalin) is a highly toxic material that can cause severe burns upon inhalation, ingestion, or skin contact. Some people are extremely sensitive to formalin and can develop itching rashes from contact with a product containing as little as 1 part in 5 million! Formalin is also a suspected human carcinogen (cancer-causing agent).

According to OSHA's (Occupational Safety and Health Administration) Hazard Communication Standard, any material considered hazardous (defined by a designated list of criteria) must be listed on a product's MSDS, and its hazard information conveyed on the product's label if it is present at 1% or greater. If it is considered a carcinogen by OSHA, NTP (National Toxicology Program), or IARC (International Agency for Research on Cancer), the percent is lowered to 0.1% or greater.

It is never safe to assume that just because a material is present in very small amounts, it no longer presents a hazard. Some chemicals are more toxic than others. The more toxic a

### **Are All Those Chemicals With Long, Scary Names Actually Hazardous?**

Because chemical names are not terms most of us use in our everyday vocabulary, reading product labels can sometimes be a confusing, difficult task. Not every chemical you find in a list of ingredients is necessarily hazardous. While it is easy to believe that the longer and more complicated a name a chemical has, the more harmful it may be to our health, that just isn't the case! *Benzene* has a short chemical name but it is a highly toxic chemical. *N,N''-Bis (4-chlorophenyl)-3,12-diimino-2,4,11,13-tetraazatetra-decanediimidamide* has a chemical name that saps all your strength just to write it down (and forget about trying to pronounce it!), but it is relatively harmless. It is an antimicrobial agent found in solutions for disinfecting contact lenses and reducing contamination in humidifiers. In fact, cases have shown that persons who consumed 2 grams daily for a week were without any adverse health effects!

### **What's In A Name?**

Sometimes it is difficult to tell just what an ingredient is because of the numerous synonyms that may be associated with every chemical in the products we use. There are chemical names, common names, and tradenames for many chemicals. For example:

Chemical Name    *sodium hypochlorite*

Common Name    *bleach*

Tradename        *Chlorox*

Some chemicals have more than fifty various chemical and tradename synonyms! When you read a product's label, you will see the *chemical name* of a hazardous ingredient. Sometimes there's confusion because one chemical used in two similar products may be listed differently on each product. For example methyl alcohol may be listed as methanol and amyl acetic acid may be listed as amyl acetic ether.

I'll give you a good example of what I mean. A few years back I remember becoming darned frustrated trying to find more information on lauryl alcohol. The product label said it was a real irritating material and I wanted to know more about it. Well, that was in the days before I got smart and started making sure that all the products we received came with an MSDS. So, I didn't have one on the whole product. I turned to our reference collection of MSDSs and looked up lauryl alcohol. It just wasn't my day cause lauryl alcohol was not in the index. I was about to forget it when I walked my brother-in-law Jack. He's a big time industrial hygienist with a major environmental firm and he just loves to flaunt his knowledge at me every chance he gets. This particular time however, I didn't mind. Jack suggested that I cross-reference the CAS (chemical abstract services) number given on the product label with the CAS Index in our MSDS collection. Sure enough, that number was there; only the name was *n-*

## **Personal Protective Equipment (PPE) – What To Use And When To Use It**

It is just as important to protect yourself from any harmful ingredients (mixtures) contained in tradename products as it is to protect against pure chemicals. Personal protective equipment (PPE) such as gloves, respirators, and goggles are important tools in ensuring your safety and health.

We all know what rubber or latex gloves look like, and most of us have used them at one time or another; usually to keep our hands from getting wet when washing dishes or getting dirty when changing the oil in our car. Unfortunately, many of us are unaware that different gloves are needed to protect ourselves against different materials. Latex gloves protect against water, dirt, and microorganisms, but they don't prevent the absorption of most solvents through our skin. Rubber gloves are sufficient for protection against many chemicals, but there are several varieties of rubber [i.e. butyl rubber, natural, Neoprene, fluorocarbon (Viton)], each of which protect against different chemicals. There are also gloves made of polyvinyl chloride or polyvinyl alcohol. If you work with compressed gases, which have very low temperatures, you need insulated gloves to protect against frostbite (cryogenically protective gloves).

## **First Aid**

Okay, so you disregarded the label's cautions and splashed a liquid in your eye. What should you do?

Happens all the time. There's always one person who thinks that cautions on a product label are exaggerated, or that they're not klutzy enough to spill or splash a product on themselves. No matter how careful you are, there is always the chance that something will go wrong and that's why PPE like goggles and gloves are necessary. You might be in the darkroom developing some film...whoops, you drop a set of tongs in the developing solution and SPLASH! The solution is now in your eyes and it stings like crazy. That's right, you should have worn the safety glasses as instructed on the developing solutions' label. But it's too late to put them on now, so what do you do?

There are many ways to be exposed to chemicals and you need to know what to do in case it happens.

- 1) *Washing Skin:* *Quickly* remove any contaminated clothing. Rinse skin with flooding amounts of water for at least 15 minutes. Wash exposed area with soap and water. For reddened or blistered skin, consult a physician. Some chemicals may react adversely with water, and if you read this about an ingredient on a label or MSDS you might decide not to wash the material off with water. While the material may react with water, a tradename product usually does not contain 100% of a chemical and

because it is present in dilute amounts, its potential water-reactivity will be lessened. In addition, continuous flooding amounts of water will subdue any initial reaction that may occur. So unless a label specifically tells you *not* to wash with water, use it!

### **What's In The Law?**

So many people of all ages have suffered injury and illness due to incidents involving tradename products that the federal government enacted laws to protect users. For example, commercial pesticides like Raid and Blackfly are regulated under the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA). This law, which is enforced by the Environmental Protection Agency (EPA), requires the manufacturers of these products to adhere to strict labeling, packaging, and shipping guidelines designed to help users protect themselves from the physical and health hazards associated with the products' chemical ingredients.

Other federal laws protecting users of tradename products include the Consumer Product Safety Act (CPSA), enforced by the Consumer Product Safety Commission; the Food, Drug, and Cosmetic Act (FDCA), enforced by the Food and Drug Administration (FDA); and the Federal

### **Common Tradename Product Label Statements and What They Mean**

No two product labels will look exactly alike, but they do have similar formats. In general, tradename product labels will contain the manufacturer's name, address and emergency phone number; signal word; directions; applications for use; brief hazard statement (may or may not designate the causative ingredient); precautionary measures; first aid instructions; handling and storage instructions; contents (usually does not include a complete list); and warranties.

Read through the label. Note any special directions, precautions, or hazards associated with the product. If you have any questions, call the number provided by the manufacturer; it will usually appear at the bottom of the label.

### **Common Label Statements and What They Mean**

- 1) **Keep out of reach of children (and pets):** Self-explanatory. Children are curious by nature (as are pets) and they can easily hurt themselves by ingesting, touching, or inhaling a product or creating a dangerous situation (ex. puncturing a container that is under pressure or allowing a flammable product to come in contact with an ignition source).
- 2) **Do not use while smoking:** The product is combustible/flammable and a hot ash from the cigarette, cigar, or pipe may ignite the product.
- 3) **Do not puncture or incinerate!**  
**Contents under pressure!:** Found on products in spray cans. If a container that is under pressure becomes punctured, it could explode with enough force to knock you backwards or blow off a hand or finger!
- 4) **Do not store above X\* (temperature varies):** Storage above a designated temperature creates a potentially dangerous situation where a container's contents may expand and cause the container to burst.
- 5) **Avoid prolonged exposure to sunlight:** Sunlight may be enough of a heat source to cause a material to catch fire or burst its container or it may cause a chemical change in the product, rendering it unstable or ineffective.
- 6) **Do not ingest! (harmful or fatal if swallowed):** The product contains ingredient(s) that are poisonous.
- 7) **Do not induce vomiting!:** While its natural to want to get rid of whatever you may have ingested, especially if it is causing pain, certain products contain ingredients that could severely damage your digestive tract (or lungs through

## **SAFETY TIPS TO FOLLOW WHEN USING TRADENAME PRODUCTS**

Workers must learn to use tradename products as carefully as they would pure chemical substances. Taking a few quick steps before using any product could help save you from a potential injury.

- 1) Never open any product until you read its label—front and back.
- 2) When reading a container label, pay special attention to any hazardous ingredients. They might be presented in bold print or have an \* (asterisk) placed after their names.
- 3) If the label tells you to wear special equipment such as gloves or to use only in a well-ventilated area, do as the label instructs. Disregarding any instructions could lead to possible injury.
- 4) Read the MSDS provided by the supplier/manufacturer of the product. The MSDS gives you more in-depth hazard information than can be included on a product's label. Your local hardware store can provide you with MSDSs for many products purchased for home use such as paints, thinners, and adhesives.
- 5) Pay attention to the container's closure. Many products have a child-proof safety mechanism that often becomes adult-proof as well. Many frustrated users have sprayed, splashed, or cut themselves while trying to forcibly pry off a container top. (Hint: read the cap; it usually explains how to open the container with relative ease! Be patient.)
- 6) Always close containers when you are finished using the product. A fully or even partially open paint can left indoors could give off enough vapors to cause headache, sore throat, dizziness, nausea, vomiting, and a variety of other adverse effects that may even be severe. In addition, open containers can easily become contaminated with other substances.

## **Tradename Ingredient Indexes**

On the following pages you will find two indexes that list various products and the hazardous materials most frequently contained within them. The first index is organized according to product and the second according to chemical name.

### **Ingredient Index By Product**

#### **ABRASIVES**

- aluminum oxide
- ferric oxide
- silicon carbide
- silica (silicon dioxide)
- titanium dioxide
- zirconium dioxide

#### **ADHESIVES**

- ammonia
- ammonium hydroxide
- butyl benzyl phthalate
- dibutyl phthalate
- diethylene glycol
- methyl chloroform
- oleic acid
- phenol
- polyvinyl alcohol

#### **ANTIFREEZE**

- mono- and di-ethylene glycols

#### **BATTERIES (dry cell)**

- ammonium chloride
- manganese dioxide
- mercuric oxide
- potassium hydroxide
- zinc metal

#### **CAULKING COMPOUNDS**

- chromium
- lead
- mineral spirits
- polydimethylsiloxane (silicone rubber caulking)
- titanium dioxide
- xylene

## **Ingredient Index By Chemical**

### ACETONE

nail polish removers  
paint/varnish removers

### ALCOHOL (ETHANOL)

dyes  
inks  
varnish/shellac

### ALCOHOL (DENATURED)

lighter fluid  
silver polish

### ALCOHOL (ISOPROPANOL)

cleaners/degreasers  
dyes  
paint/varnish remover

### ALCOHOL (METHANOL)

dyes  
film cleaners (photography)  
motor fuels  
paint/varnish remover  
polishes  
varnish/shellac

### ALUMINUM OXIDE

abrasives

### *p*-AMINOPHENOL HYDROCHLORIDE

intensifier/reducer (photography)

### AMMONIA

adhesives  
detergents

### AMMONIUM CHLORIDE

batteries (dry cell)

### AMMONIUM HYDROXIDE

adhesives  
film cleaners (photography)

### ARSENIC

oil paint pigment (artist materials)

## **Hazardous Ingredients Profiles**

The following is a hazardous chemicals list and a brief summary of each material's health effects, smell (if it has a distinct odor it may be detected even in a mixture, dependent on concentration), incompatibilities, and flammable/ combustible determination. In addition, it will be stated whether or not the chemical is considered a hazardous waste under the Resource Conservation and Recovery Act (RCRA) and what property of the chemical caused it to be included in the list (corrosivity, reactivity, ignitability, or toxicity). Regarding tradename products, the degree of hazard a chemical presents will depend on the concentration of the hazardous ingredient(s) in the product and exposure duration. A fire diamond designed in accordance with National Fire Protection Association criteria is also provided. It can be interpreted as follows:

### **Position A - Health Hazard**

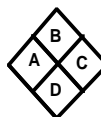
0 = Ordinary Combustible Hazards in a Fire

1 = Slightly Hazardous

2 = Hazardous

3 = Extreme Danger

4 = Deadly



### **Position B - Flammability**

0 = Will Not Burn

1 = Will Ignite if Preheated

2 = Will Ignite if Moderately Heated

3 = Will Ignite at Most Ambient Conditions

4 = Burns Readily at Ambient Conditions

### **Position C - Reactivity, Instability**

0 = Stable and Not Reactive with Water

1 = Unstable if Heated

2 = Violent Chemical Change

3 = Shock and Heat May Detonate

4 = May Detonate

### **Position D - Special Hazard**

**OX** = Oxidizer

**W** = Use No Water, reacts!

**HAZARDOUS TRADENAME  
PRODUCTS YOU WORK WITH**

Use the following pages to record important information about the tradename products you use on your job.

Product Name: \_\_\_\_\_

Manufactured By: \_\_\_\_\_

Hazardous Ingredient(s)      CAS No(s)

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Product Use: \_\_\_\_\_

Protective equipment required when using:

\_\_\_\_\_  
\_\_\_\_\_

Other precautions required when using:

\_\_\_\_\_  
\_\_\_\_\_

Direct questions about this product to:

\_\_\_\_\_  
\_\_\_\_\_



Product Name: \_\_\_\_\_

Manufactured By: \_\_\_\_\_

Hazardous Ingredient(s)      CAS No(s)

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Product Use: \_\_\_\_\_

Protective equipment required when using:

\_\_\_\_\_  
\_\_\_\_\_

Other precautions required when using:

\_\_\_\_\_  
\_\_\_\_\_

Direct questions about this product to:

\_\_\_\_\_  
\_\_\_\_\_

## **Information and Emergency Contacts**

Get the following names/phone numbers from your supervisor.

YOUR SUPERVISOR'S PHONE NUMBER:

---

GENERAL EMERGENCY HELP:

---

FIRE:

---

CPR-TRAINED INDIVIDUALS:

---

MEDICAL HELP:

---

SECURITY:

---

HELP WITH EQUIPMENT:

---

CHEMICAL SPILL CLEANUP:

---

CHEMICAL WASTE DISPOSAL:

---

AMBULANCE:

---

POLICE:

---

MSDS ASSISTANCE

---

POISON CONTROL CENTER:

---