Loss Control Insight

BATTERY CHARGING - A MULTITUDE OF HAZARDS!

Explosive hydrogen… Acidic liquids and vapors… Electrical burns… Strains, sprains, hernias and compressed discs. All of these hazards arise when servicing, charging, or jumping the common lead-acid battery found in cars and trucks. The hazards can be minimized by following a few common sense safety rules.

Eye Protection: First, always wear safety goggles or a face shield when working around a battery. Batteries contain corrosive acids that are capable of eating away metals. It takes just one droplet to cause serious eye damage. Just popping open the vent cap may throw out a droplet. A short or faulty regulator can cause the electrolyte to boil, releasing acid vapors. A fault within the battery could cause it to explode, throwing fragments of the case and acid.

Fire Protection: Lead-acid batteries produce flammable hydrogen gas while being charged. This highly explosive gas, generated within the cells, will expand and seep out of the vent caps. A cigarette, tool, or spark from any source could ignite the gas, causing the battery to explode. Always charge in a well ventilated area. Remember too that the battery is receiving a charge and releasing hydrogen when the car is running, not just when hooked up to a battery charger.

Jump Starting: Dead batteries in cars and trucks are not uncommon-particularly in winter. The first thought is to get a jump start. When jumping a battery, remember the following safeguards:

- Be sure all electrical equipment is off. If you connect the jumper battery while a load is being drawn, a spark could occur.
- Check the battery fluid level. If the plates are exposed, add water until they are covered. Never add acid.
- Make sure both batteries are of the same voltage.
- Make sure vent caps are in place to prevent electrolyte splash.
- Use good quality jumper cables-at least 10-gauge wire.
- Always be sure of your polarity when arranging the jumper cables:
    1. Connect the first cable to the positive (+) terminal of the *good* battery; then attach the other end of that cable to the positive (+) terminal of the *dead* battery.
    2. Next, attach the second cable to the negative (-) terminal of the *good* battery, and make the fourth and last connection to a clean metal part, such as the engine block of the car being energized, rather than to its negative battery terminal. This completes the electrical circuit, as if it were connected to the dead battery, but if sparks are produced, it serves to keep them away from any explosive battery gases.
    3. Never lay your tools on top of the battery. They could come in contact with both posts, or the positive post and a ground, creating a short.

Protect Your Back: Batteries are heavy. If you must move one, use a battery strap as a handle, keep your back straight-don't bend at the waist--and tighten your stomach muscles as you lift. Don't twist your spine as you lift or move it.

Remember that these rules apply both on and off the job. The batteries in your own vehicle or on your boat are just as potentially dangerous. Respect the hazards and take no chances or short cuts!

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HAZARDS OF SOLVENTS

We use solvents practically every day in our lives. At work, we may use or be exposed to solvents when we come in contact with paints, coatings, while using dip tanks, thinners, degreasers, cleaners, glues or mastics. As a result of this widespread usage, it is important to know some of the hazards that are associated with the group of chemicals, generally called "solvents."

For practical purposes a solvent is simply a liquid capable of dissolving specific solids or liquids. As you know, there are solvents that we use daily that are hazardous. Petroleum based solvents are the most common type used in industry. Therefore, as part of your job, it's important for you to understand the hazards of working with or around solvents.

Exposure and over-exposure to a solvent can come from various methods. The routes of entry may include:

- Absorption by direct contact on the skin. If there are no "barriers" between the solvent and your skin, the solvent can be absorbed through your skin.
- Inhalation by breathing solvent vapors. Breathing in the solvent vapors can quickly result in the chemical getting into your body and bloodstream via your lungs.
- Ingestion from literally eating the chemical by not practicing good hygiene after handling solvents. Direct contact with your hands and mouth through eating or smoking may result in unexpected ingestion of solvents.
- Puncture of the skin by a tool or other object which has a coating of solvent. Punctures can result in the direct introduction of toxic chemicals into your body.

Overexposure to solvents can cause a variety of ailments. Depending on the type of solvent you are exposed to, the body will react in different ways. Skin contact may result in minor skin rashes or an allergic reaction resulting in "chloracne." This happens when the solvent dissolves the skin's natural oils. Some workers can develop a sensitization to a particular product or chemical. Sensitization results in the entire body being "overly" sensitive to a particular chemical or product. After sensitization has occurred, even a very slight exposure can result in adverse or serious reactions. Serious overexposures can lead to illnesses resulting in organ or tissue damage.

Solvents are very useful in our everyday lives. If we take the time to learn more about them, we can be better prepared to properly use them, protect ourselves and effectively get our job done.

If you are unsure of the solvent or product that you are using, ask questions or check the MSDS.