

**EFFECTS OF INSECT REPELLENT ON HARD HATS**

**Division:** Canada

**Department:** All Operations

**Description of Incident:** *(Who, what, how, when)*

**Original Alert from Flint Canada states the following:**

Over the past two weeks the owner of a hard hat has been using insect repellent throughout the workday. The worker was applying the repellent entirely over his outerwear, which included his hard hat. He recently noticed small cracks starting to form over the shell of his hard hat. He then inquired with others who were applying insect repellent in the same manner. Upon inspection of the other hard hats, they too have been found to have cracks. It is recommended that when applying insect repellent, remove the hard hat, apply the repellent, then put the hard hat back on.

**Causes:** *(Why did the incident occur?)*

- ❖ DEET is the active chemical in insect repellent that has a very detrimental effect on any kind of plastic, however, solvents within the solution may also cause a problem. For example, in Deep Woods OFF, there is 30% DEET; and 1-5% butane; 1-5% propane; 1-5% isobutene; and 50-60% ethanol. All of these ingredients will have an effect on the hard helmet.

**BRC's Recommendations to Prevent Further Reoccurrence:**

**ALL HARD HATS THAT HAVE BEEN EXPOSED TO INSECT REPELLENT SHOULD BE INSPECTED IMMEDIATELY AND REMOVED FROM SERVICE AS NECESSARY.**

- ❖ Make sure you remove your hard hat when applying insect repellent.

**The following are guidelines for proper maintenance and use of hard hats:**

- Check the shell for cracks, dents, nicks, gouges and any damage from impact penetration, abrasion, rough handling or wear.
- Check the suspension system closely for cracks, frayed or cut straps, torn headband or size adjustments slots, loss of pliability or other signs of wear. Normal wear, hair and skin oils and sweat all degrade the suspension system.
- Never alter or modify the hardhat shell or suspension. Drilling holes in the shell is prohibited.
- Never carry or wear anything inside your hard hat between the suspension and the shell. A clearance must be maintained between the hardhat shell and the wearer's head for the protection system to work properly. A ball cap or other object may limit this clearance.
- There is very little potential for stickers to interfere with the integrity of the hardhat shell. If applying stickers to the shell keep them at least 3/4 of an inch away from the edge of the shell. However, the number of stickers should be kept to a minimum in order to permit regular inspection of the shell.
- Hard hats are not designed to be worn backward. Wearing of a hard hat in this manner greatly reduces the protective properties of the hard hat.
- Avoid storing a hardhat in the direct sunlight.
- Paints, paint thinners, and some cleaning agents can weaken the shell of the hard hat and may eliminate electrical resistance.
- Clean a hard hat regularly with mild soap and warm water.

**For more info:** Contact your area Safety Representative