Hazardous Materials, Personal Safety, And Refinish Safety

Video Scripts

I-CAR®

Version 1.6

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Introduction

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Video: Topics Off Limits

It's important that we avoid topics which create a conflict with anti-trust laws or the combines act. Therefore, we will not talk about labor rates, parts or equipment prices, repair times, cost and profit margins, dividing up the market between customers and suppliers, a boycott or refusal to deal with anyone, judgment on the work of a specific shop or practices of a specific insurance company, policies and guidelines for settling claims, or how a shop or company conducts its business.

These topics have nothing to do with repair technology, so there is no need to discuss them in class. If they are brought up in class, the conversation will be stopped.

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Module 1 - Safety Data Sheets

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Video: Using A Fire Extinguisher

There should be several fire extinguishers in the collision repair facility, and they should be located where they're easily seen and accessed when necessary. Fire extinguishers in the shop area should be classified as type ABC extinguishers, which are used to put out ordinary combustibles, burning liquids or grease, and electrical fires.

Instructions for using an extinguisher may even be printed on the extinguisher body. But you should be familiar with their use before there's an actual emergency. For purposes of this video, we'll use this fire-training simulator to show the proper use of an ABC fire extinguisher for fighting typical collision shop fires.

When using a fire extinguisher inside of a building, be prepared to position yourself between the fire and an exit so you can escape if necessary. If you're outside, stand upwind of the fire, so the fire and the extinguishing agent blows away from you.

When you're ready to use the extinguisher, twist the pin to break the plastic tie lock, and pull out the pin. Don't squeeze the handle yet or you won't be able to get the pin out. This is a common problem when using an extinguisher.

Move to position the nozzle within 8 to 10 feet, of the fire. Use one hand to squeeze the handle. Position the other hand close to the nozzle to properly direct the flow of the dry chemical. Aim at the base of the fire, and sweep the nozzle back and forth to form a cloud bank of dry chemical that will knock down the fire.

The extinguisher will expel a lot of powder in a short time, quickly extinguishing the flames. Don't turn around and leave when the fire appears to be out. Slowly back away without taking your attention away. If there's another flare up, move in again and extinguish the blaze as before.

When the extinguisher is spent, lay it on its side. This is the universal sign to alert others it has been used. Don't hang it back up until it's been recharged.

The extinguisher will leave a layer of fine powder on a wide area. This powder is a mild corrosive, and should be cleaned up as soon as possible after the fire. Make sure the vacuum has a high-efficiency particulate air filter to best contain the fine powder.

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Module 2 - Labels

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Activity: Requirement For Labels

This I-CAR Instructor has invited three students to help him identify the clear liquids in jars labeled A, B, and C. He asks them if they can determine the contents of each jar by looking at the color or smelling the odor of the liquid.

Student B says it smells like ammonia, student A says alcohol, and student C says there is no smell at all and that it might be water. Color and smell doesn't appear to be a good way to identify the liquids.

When the liquids in jars A and B are combined, the color changes. But that still doesn't help us identify what the liquids are. Taste might be a way to determine what the liquids are, but Students A, B, and C are hesitant to drink their liquids not knowing for sure the contents of each jar. The Instructor knowing that jar C is nothing but water takes a drink. He then points out that containers that do not have a label must have a workplace label that states the name of the product and whether it has any hazardous properties. Even jars of water must be properly labeled so accidents don't happen.

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Module 3 - Hazardous Materials

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Activity: Mixing Unknown Chemicals

This I-CAR instructor is explaining how some materials cannot be mixed, even in the same disposal container. But many times, employees will wipe up a spill in the repair facility with a towel and dispose of the towel in the nearest trashcan, not realizing the potential risks.

The instructor disposes of a wrapped-up towel in a can on the table. The can represents a typical trashcan at ABC Collision Repair.

There's no reaction, so the instructor begins to discuss more about hazardous materials that are commonly found in a collision repair facility. Several minutes pass while he discusses these products.

But wait!

There seems to be a problem with the trashcan. A strange chemical reaction with the chemicals has caused a hazardous spill. It's overflowing onto the ABC Collision Repair floor.

This is an emergency situation—What are YOU going to do?

Activity: Safety With Corrosives

There is a certain paint surface condition where a corrosive material is sometimes recommended as part of the proper repair procedure. The condition is called rail dust, which occurs when tiny metal particles become imbedded in the paint surface. These metal particles cannot be buffed out. They must be chemically removed.

Some vehicle makers recommend using an oxalic acid-based wash. It's important to read the label directions carefully. Acid-resistant gloves and eye goggles are required when using this oxalic acid material. The product SDS may specify other precautions, such as wearing an air-purifying respirator to prevent inhaling vapors during prolonged use.

OH NO I CAN'T SEE! SOMEBODY HELP ME!

It appears there is another emergency situation at ABC Collision Repair. The acid spilled in the technician's eyes, and also on the car and the floor. You have 15 seconds to decide what to do. Click to the next screen for a list of options.

Module 4 - Personal Protective Equipment

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Demonstration: Removing Disposable Gloves

Wearing disposable light-duty gloves to protect yourself from hazardous materials is something we are all familiar with. But how do you remove and dispose of those gloves without getting the hazardous materials on your clean hands? Let's look at the proper way.

Start by grabbing the center of one glove with your other gloved hand. Pull at the center of the glove until it is removed. Hold the removed glove in your fist. Then using your clean hand, start at the wrist and pull the glove up and off so it traps the first glove inside.

You can then properly dispose of both gloves without making contact with the hazardous material.

Demonstration: Inserting Ear Plugs

Foam ear plugs are effective hearing protection if they are installed properly.

Start by ensuring that your hands are clean so that no irritants will be transferred to your ear. Then roll the plug between your fingers to form a compressed cylinder. This shape will properly fit your ear canal and provide the best hearing protection.

Then use your opposite hand to pull on the top of your ear. This helps widen your ear canal and makes inserting the foam plug easier.

Carefully insert the foam plug into the ear canal and allow it to slowly expand. Do not adjust the ear plug once it's in place. Perform the same procedure for the opposite ear.

Video: Vapor Overcome Exercise

A refinishing technician has just sprayed a urethane clearcoat and has opened the spraybooth door and is coming outside. The technician is overcome by the refinishing material vapors, due to not wearing the proper respirator. Though the technician is able to sit down on the closest chair, the emergency is not over.

You're the nearest technician.

What should you do?

Video: Respirator Fit-Test

A qualitative fit-test for a respirator is easy to do with a fit-test kit, such as this.

The test kit consists of a loose-fitting hood with a clear visor and a small hole in front, sprayers, called nebulizers for atomizing the solution, and the taste-test solutions. There are two concentrations of the solution, one weaker than the other.

The technician being fit-tested should not eat or chew gum for at least 15 minutes before the test, or drink anything except for water. The supervisor explains how the test will be conducted.

The technician being fit-tested keeps the respirator off, and puts on the hood. The collar is positioned forward, so there's room between their face and the hood window. The weaker, or sensitivity solution is selected. The technician being tested is asked to breathe at a normal rate through their mouth and indicate when they can taste the solution.

The supervisor sprays the sensitivity solution inside the hood by squeezing the nebulizer ten times. If no taste is detected, the solution would be sprayed ten more times for a total of up to 30 times before another type of test would be required.

After the test with the sensitivity solution, the test hood is removed and the technician being tested is given a few minutes to allow the taste to dissipate. The subject then puts on the selected respirator and does a seal check. The test hood is put on again as before and the technician is asked to breathe only through their mouth. This time the stronger solution is sprayed into the hood the same number of times as before, a minimum of ten.

The subject is then asked to perform a number of exercises for 60 seconds each, including normal breathing, deep breathing, turning their head slowly from side to side, nodding their head slowly up and down, and reading a paragraph aloud very slowly. To keep enough solution in the hood, the supervisor sprays more into the hood about every 30 seconds. If the subject tastes the solution, it means an inadequate respirator fit and the test is stopped. After waiting at least 15 minutes, the subject adjusts the fit on the respirator, and the test is repeated.

Video: Seal Check

Put on the respirator by fastening the straps, positioning the respirator over your nose and mouth, and fitting the head cradle over your head.

The first time you put on the respirator, you'll need to adjust the straps. Most respirators have adjustments on the top and bottom. Adjust for a comfortable fit: not too tight and not too loose.

It only takes a few seconds to perform positive and negative seal checks, so do them whenever you put the respirator on. To perform a positive seal check, place your palm over the exhalation valve cover without distorting the shape of the respirator, and gently exhale. You should not be able to exhale. If you can, it means there is air leaking between your face and the nosepiece. If there is an air leak, adjust the respirator position, tighten the straps, and check again.

To do a negative seal check, remove the cartridges, if the respirator is not the disposable type. Place your palms over the inhalation valves to restrict the airflow, and inhale slightly. The respirator should collapse slightly, and pull closer to your face. You should not be able to continue inhaling, If you can, it means there is air leaking between your face and the facepiece. If there is an air leak, adjust the respirator position, tighten the straps, and check again.

While using the respirator, if a contaminant can be tasted or smelled, if your breathing becomes difficult, or you feel nauseated, it's time to change the cartridges or the pre-filters. Check the pre-filters by taking them out and inspecting them. If they're dirty, replace them. Also replace the cartridges, and perform the seal checks again before returning to the worksite.

Video: Cleaning And Disinfecting A Respirator

After extensive use, such as at the end of a workday, take the respirator apart and clean it. Remove the cartridges, and any other removable parts.

Wash all the parts with a mild soap and water solution. Do not use petroleum solvents, which will harm the plastic and rubber parts. Rinse the respirator parts in clear water, removing all traces of soap.

While the respirator is apart, check the different parts for signs of wear. Reassemble the respirator, and seal it in a plastic bag, such as the bag that came with the respirator. Store the respirator in an area that does not expose it to humidity or extreme temperatures.

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