

## Work Practices That Reduce Exposure:

---

- ▶ Store/mix in power ventilated mixing room
- ▶ Mix when ready
- ▶ Mix the correct amount
- ▶ Limit spills
- ▶ Seal containers
- ▶ Quickly clean & dispose (guns & paints)
- ▶ Proper body position while spraying
- ▶ Proper painting progression based on booth configuration
- ▶ Full body paint suit (chemical resistant)
- ▶ Thick nitrile gloves
- ▶ ½-face Organic Vapor respirator (mixing, cleaning or disposing of paints)
- ▶ Goggles (when using ½-face Organic Vapor respirator)
- ▶ **Spraying:** Supplied Air Respirator (positive pressure) with full face coverage\*\*\*

\*\*\* Less protective forms of respiratory protection can be utilized under limited circumstances. **Not your decision!**



EHS Associates, Inc  
3787 River Road, Salem, Oregon 97303  
<http://ehsassociates.com>  
503.393.0980



## Isocyanate Safety Information

**WARNING!**

**Workers exposed to  
isocyanates may develop  
a serious or fatal  
respiratory disease.**

## Potential Routes of Exposure and Health Effects

The routes of exposure to isocyanates are mainly through inhalation and skin exposure. Isocyanates are used as a catalyst in two-part primers and topcoats, and in some cases not all of the isocyanate is used up in the chemical reaction. The unreacted isocyanate evaporates into the air and poses a potential health hazard.

Once the isocyanate-containing products are cured completely, there is no release of isocyanates vapors unless it is heated enough to break it down into its original components.

Inhaling even small amounts of isocyanates may sensitize a person and they can develop asthma like reactions and symptoms. *Sensitization* may happen within days of exposure or take months or years to develop.

It is well known that once sensitized, a person is likely to experience symptoms upon repeated exposure, even in very small concentrations. The properties of chemicals and the amount and duration of exposure, may increase the chances of you developing isocyanate-induced asthma. **It is estimated that 5-20% of workers exposed to isocyanates will develop asthma.**

Direct skin contact with isocyanate-containing products may cause rashes, blistering and reddening of the skin. Again, repeated skin contact may cause contact dermatitis and skin sensitization. Some recent research has suggested that isocyanate exposure through the skin is very significant in the development of respiratory sensitization. Therefore, skin contact should be avoided.

**Exposure of isocyanates to the eye can result in eye irritation, temporary blurred vision and cornea damage.**

**It is well known that once sensitized, a person is likely to experience symptoms upon repeated exposure, even in very small concentrations.**

## Personal Protective Equipment

### Skin Protection

Full coveralls (shoot suit) are required when spraying isocyanates containing paints and primers. Nitrile or PVC gloves must be worn. These materials prevent isocyanate compounds from reaching the skin. A full face respirator is preferred. A half mask may be worn as long as the eyes and face are protected with chemical goggles.



### Respiratory Protection

Isocyanates have poor odor warning properties. In other words, if an employee smells the sweet, fruity pungent odor of an isocyanate they are probably overexposed. Therefore, a positive pressure supplied air respirator is required. The full face mask or hood will also provide protection for the skin and eyes. Other types of respirators do not provide adequate protection for workers spraying isocyanate containing materials since the worker can not detect when the chemical has broken through the filter.

A respiratory protection program must be implemented. When using a supplied air respirator, it is critical that the breathing air supplied to the respirator is clean. A non-oil type electrical compressor specifically designed for providing breathing air is the best choice. Compressed shop air may be used if filters are provided to remove water, oil and the breakdown products of oil. The compressor must be kept in good repair, and overheating of the compressor must be prevented so that carbon monoxide will not be produced. The source of the air must be clean and distant from vehicle or other exhaust to avoid contamination of the air breathed by the painter.

