Trizol Chemical burn

What happened?

A researcher was discarding an Eppendorf pipette tip filled with buffer solution containing phenol/chloroform/isoamyl alcohol (DNA extraction) when a drop of fell onto their leg. Absorption was felt through their pants and onto their skin. The researcher was wearing nitrile gloves but no lab coat or any form of eye protection. The researcher went to the restroom and removed their contaminated clothing. Another member of the lab provided the researcher with a nonionic detergent (Nonidet P40) for treatment to place directly on their skin. No additional medical attention was sought. The incident was called into the EH&S general line.

Phenol Hazards

- Toxic and highly corrosive.
- Causes severe skin burns and eye damage.
- Rapidly absorbed through skin.
- When combined with chloroform, penetration of skin, clothing, and most glove materials is enhanced.

Injury

No injuries were sustained. This incident is considered a "near miss" because the lack of proper PPE use resulted in a risk of injury to the skin or eyes.

Contributing Factors

Lack of proper PPE.

Corrective Actions

- Phenol exposure should be treated with a liquid low molecular weight polyethylene glycol (PEG 300 or 400).
- SOP for phenol must be reviewed annually by all applicable lab members.
- Make EH&S' Phenol Safety Fact Sheet and SDS available to personnel to read, review and understand.
- Distribute EH&S' Eye Protection Fact Sheet.
- DPS shall be contacted in the event of an exposure.

Quick Tips

Use splash goggles in phenol-chloroform extraction procedures. Note: Safety glasses are NOT appropriate for splash hazards — chemical splash goggles must be worn.

Work with phenol should be performed in a fume hood, when possible. A fume hood must be employed if phenol is heated, sprayed, powdered, or used in more than very small quantities