Increasing Ventilation Reduces Exposure

- Use source capture and local exhaust systems
- Open windows and doors as much as possible
- Use fans to blow air away from your breathing zone

Proper Work Practices Reduce Exposure

- Use mixing stations to prepare products.
- Replace lids immediately after using a chemical.
- Use the smallest quantity of a chemical.
- Make sure other workers in your area know when you are using keratin smoothing products.
- Use a lidded trash can and empty it frequently.
- Wear your protective equipment (such as mask or gloves) when appropriate.

Taking Care of Your Hands Prevents Skin Problems

- Use gloves when handling chemicals
- Moisturize after washing
- Dry your hands completely before putting on gloves
- Use barrier creams
- Avoid rubbing hair in web spaces between your fingers
- Wear gloves when washing hair

More Resources

OSHA Hazard Alert Update: Formaldehyde Exposures
http://tinyurl.com/OSHAformaldehyde

OSHA Formaldehyde Fact Sheet
http://tinyurl.com/OSHAformfacts

OSHA Formaldehyde Standard: 1910.1048
http://tinyurl.com/FormaldehydeStandard

OSHA: Health Hazards in Nail Salons
http://tinyurl.com/OSHAnails

Cornell University: Health Hazard Manual

New York Committee for Occupational Safety and Health
http://tinyurl.com/NYCOsh-PA

NIOSH Health Hazard Evaluation: Brazilian Blowouts
http://tinyurl.com/NIOSHblowout

Colorado Office of Barber and Cosmetology Licensure
http://tinyurl.com/COlicensure

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### Ways to Know if a Chemical is Hazardous

- Product labeling
- MSDS or SDS for the product
- Information from industry professionals
- Information from the OSHA website
- Other resources are listed on the back of this handout

### Allergies

- Neurologic
  - Acetone – Polish remover
  - Toluene – Nail polish, hardeners, polish removers
  - Acetonitrile – Artificial nail removers

- Cancer, Irritation
  - Formaldehyde – Nail hardeners

- Allergies
  - Methacrylate – Monomers in acrylics & gels
    - MMA, (methyl methacrylate) Can’t be 100%
    - EMA (ethyl methacrylate)
    - HEMA (hydroxyethyl methacrylate)

- Irritation
  - Methacrylic Acid (MAA) – Nail primers
  - Ethyl cyanoacrylate – (> 90%) in nail glue

### Cancer

- Neurologic
  - Acetone – Polish remover
  - Toluene – Nail polish, hardeners, polish removers
  - Acetonitrile – Artificial nail removers

- Cancer, Irritation
  - Formaldehyde – Nail hardeners

- Allergies
  - Methacrylate – Monomers in acrylics & gels
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- Irritation
  - Methacrylic Acid (MAA) – Nail primers
  - Ethyl cyanoacrylate – (> 90%) in nail glue

### Neurologic

- Acetone – Polish remover
- Toluene – Nail polish, hardeners, polish removers
- Acetonitrile – Artificial nail removers

### Irritation

- Formaldehyde – Nail hardeners

### Artifical Nails

- Acetone – Polish remover
- Toluene – Nail polish, hardeners, polish removers
- Acetonitrile – Artificial nail removers

- Formaldehyde – Nail hardeners

- Methacrylate – Monomers in acrylics & gels
  - MMA, (methyl methacrylate) Can’t be 100%
  - EMA (ethyl methacrylate)
  - HEMA (hydroxyethyl methacrylate)

- Irritation
  - Methacrylic Acid (MAA) – Nail primers
  - Ethyl cyanoacrylate – (> 90%) in nail glue

### Disinfectants

- Allergy & Irritation
  - Quaternary ammonia compounds (“Quats”)
    - Exc. benzalkonium chloride

- Irritation
  - Phenols
    - Phenol or o-Phenylphenol
  - Bleach
    - Sodium hypochlorite

- Neurologic
  - Alcohols
    - Ethanol
    - Isopropanol

- Allergy and irritation and sun sensitivity
  - Salicylic acid (Jessner’s peel)
  - Aspirin allergy
  - The risk in pregnancy is not known

- Irritation and sun sensitivity
  - Alpha hydroxy acids
    - “Fruit” acids
    - Citric, glycolic, malic, lactic
    - Beta hydroxy acid
  - Salicylic acid
    - Jessner’s peel
    - Salicylic & lactic acid, resorcinol

### Traditional Hair Straighteners

- Relaxers
  - High pH (11.5-13.5) Irritants
    - Sodium hydroxide (NaOH)
    - Calcium hydroxide (CaOH)
    - Potassium hydroxide (KOH)

- Permanent Relaxers “Japanese Method”
  - Allergies
    - Ammonium thioglycolate
  - Irritation
    - Hydrogen peroxide
    - Sodium bromate

### Hair Dyes

- Allergies
  - Aniline derivatives
  - 2,5-diaminotoluene
  - Ammonia and substitutes (AMP, MEA)
  - Peroxide

- Irritation
  - p-phenylenediamine dyes
  - Para dyes (p- or 4-amino)

### Hair Sprays

- Allergies
  - Gum Arabic
  - Vegetable gum
  - Benzophenone-4
  - Lauryl dimethyl benzyl ammonium chloride

- Neurologic
  - Denatured alcohols
  - Methoxyethene
  - Isobutane

- Irritation
  - Propylene glycol
  - Potassium hydroxide (KOH)
  - Ammonium benzoate
  - Amino methyl propanol
  - tert-Butyl alcohol

### Artificial Nails

- Allergies
  - Ammonium thioglycolate
  - Glyceril monothioglycolate

- Irritation
  - Sodium or potassium bromate
  - Sodium or potassium perborate
  - Hydrogen peroxide
  - Ammonia substitutes
    - monoethylamine (MEA)
  - Aminomethyl propanol (AMP)

- Neurologic
  - Acetone – Polish remover
  - Toluene – Nail polish, hardeners, polish removers
  - Acetonitrile – Artificial nail removers

### Permanent Nails

- Allergies
  - p-phenylenediamine dyes
  - Para dyes (p- or 4-amino)

### Keratin Smoothing Products

(aka Brazilian Blowout, Global Keratin, & Others)

- Allergies
  - p-phenylenediamine dyes
  - Para dyes (p- or 4-amino)

- Irritation
  - Aldehydes – released as intermediates from some products

- Cancer
  - Most release formaldehyde as intermediate

- Neurologic
  - Acetone – Polish remover
  - Toluene – Nail polish, hardeners, polish removers
  - Acetonitrile – Artificial nail removers

- Allergies
  - p-phenylenediamine dyes
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