DĀR-X

Our product, BRAZILIAN SILK™ - Nectar is a hair treatment system that contains low levels of aldehyde that plays a role in the process of bonding new keratin molecules to the hair. During the process of bonding, disulfide bonds are enhanced through the process of heating the applied product. As a result, a series of complex oxidation-reduction reactions take place. Those reactions convert a small amount of the aldehyde to formaldehyde in a chemical equilibrium with other carbonyl forms. Independent laboratory testing (FAI Labs, Atlanta, GA) of the Nectar hair treatment has been shown to contain 1.2% w/v formaldehyde. Formaldehyde concentrations that have been associated with various toxic effects in humans show wide inter-individual variation and are route dependent. A detailed report produced by the Oregon Department of Health showed, in salons, that with solutions of 8-10% formaldehyde gave off an 8-hour average of 0.006 to 0.3 ppm (OSHA limit of 0.75 ppm), depending on the size of the salon, the height of the ceilings, the amount of ventilation and the duration of hair treatment (Oregon OSHA and CROET at Oregon Health & Sciences University, October 29, 2010). The short term exposures varied from .1 ppm to 1.8 ppm (OSHA limit of 2 ppm). Based on these experiments, our Nectar treatment with a w/v percent of 1.22 will release approximately one-tenth those found in the Oregon salons. Meeting those assumptions would create exposures of 0.0006 to 0.03 ppm over an 8-hour period and approximately 0.06 ppm average for the short term exposure. These values are well below all occupational exposure limits and below thresholds for health effects. Symptoms of formaldehyde reactions are rare at concentrations below 0.5 ppm; however, upper airway and eye irritation, changes in odor threshold, and neurophysiological effects have been reported at concentrations </= 0.1 ppm. The most commonly reported effects include eye, nose, throat, and skin irritation (IARC 2006). The dose-response curves for DNA-protein crosslinks, cell proliferation, and tumor formation show similar patterns with sharp increases in slope at concentrations greater than 6 ppm (reviewed by Tang et al. 2009).

Cosmetologists may be exposed to high concentrations of a mixture of volatile organic compounds although these levels could be decreased significantly by following certain practices such as good ventilation of the areas, closing the packages of the beauty products when not in use and finally utilizing appropriate personal safety measures such as gloves and fume masks (Int J Environ Res Public Health. 2010 Jan;7(1):314-24).