

# Caution Due in Using MC-30 as Prime Coat

By Cynthia Mancha and Abdullah Suzek

The emission of volatile organic compounds (VOCs) by many construction, industry and transportation sources is a widespread problem. In the presence of sunlight, these VOCs react with nitrogen oxides, forming ozone. At the ground level, this pollution can cause respiratory problems, especially in children, seniors, and asthmatics.

Highway construction itself emits large amounts of VOCs, due in part to MC-30, a cutback asphalt that contains up to 50 percent kerosene by volume and functions as a prime coat. MC-30 emits its VOCs primarily during the curing process, a period after the

material is applied to the roadway project when the kerosene is allowed to evaporate.

MC-30 emissions can impact not only humans but also vegetation; according to the Environmental Protection Agency (EPA), the resulting ozone can reduce agricultural crop and commercial forest yields, increase susceptibility to diseases, and give rise to pests and harsh weather.

MC-30 also can impact those who work directly with the material. Valero's material data safety sheet for MC-30 warns that, in the short term, the fumes can cause nausea, headache, dizziness, and eye irritation. In the long term, the spec sheet cautions that the kerosene

can potentially cause dermatitis, lung damage, and even cancer.

Additionally the sheet states that, because of MC-30's polycyclic aromatic compounds, it can potentially cause anemia and disorders of the liver, bone marrow, and lymphoid tissues. Irregular heart rhythm, coma, respiratory arrest, and sudden death are also cited as consequences of contact with MC-30.


MC-30's flammability also can be a concern, as it has a low flash point between 120 and 140 deg F, making it susceptible to ignition. This is especially acute during the hot summer months, which happen to be the period during which MC-30 is most often applied.

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MC-30s use began in the postwar highway construction boom; due to its low cost and effectiveness, its popularity soared. However, concerns arose in 1970 when Congress passed the Clean Air Act (CAA), which established the National Ambient Air Quality Standards (NAAQS) and empowered the EPA to regulate emissions. To ensure public safety, the law strove to achieve NAAQS in every state by 1975 and advised states to set up State Implementation Programs (SIPs) in order to meet the standards. However, most of the states did not meet this deadline, and the CAA was amended in 1977 and 1990 in order to set new deadlines.

Today, each state has a SIP in place that guides its usage of MC-30 and other VOC-emitting substances. However, MC-30 use persists, even though alternatives that are safer for the environment and perform better than MC-30 exist and are gaining traction in the prime coat market. 

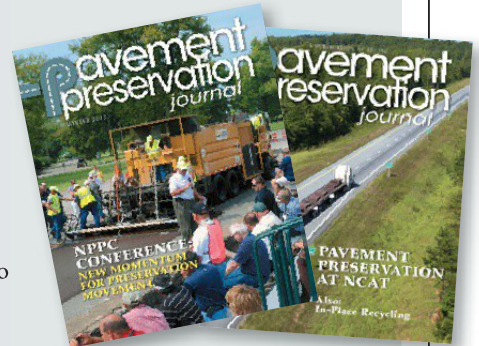
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