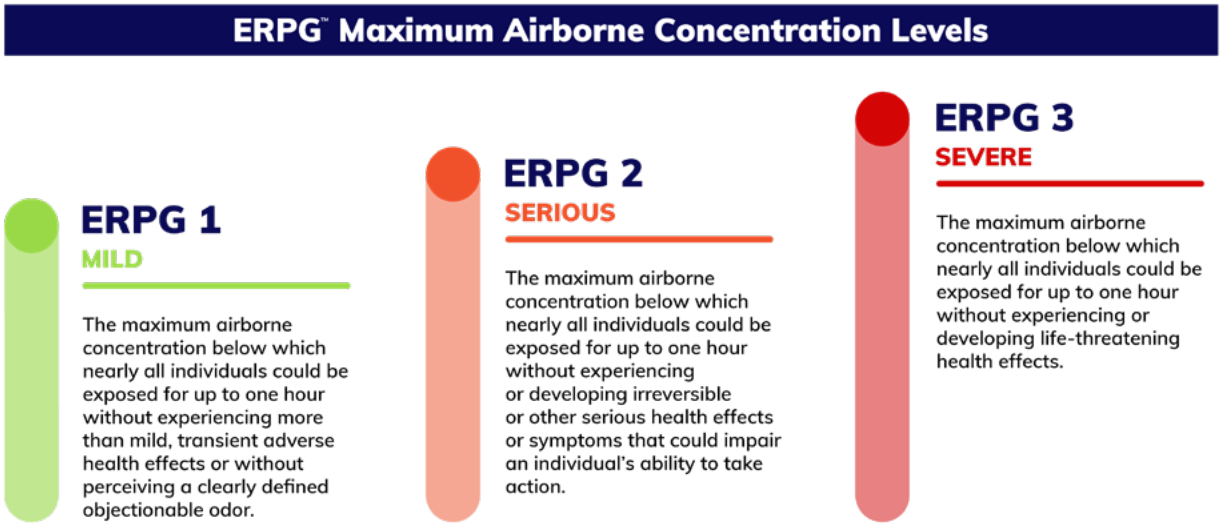
EMERGENCY RESPONSE PLANNING GUIDELINE (ERPG)
Public Comment Draft

METHYL METHACRYLATE
(2026)

ERPG-3: 170 ppm (700 mg/m^3)
ERPG-2: 50 ppm (206 mg/m^3)
ERPG-1: 17 ppm (70 mg/m^3)



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I. Recommended ERPGs and Supporting Rationales

ERPG-3: 170 ppm (700 mg/m^3)

170 ppm of methyl methacrylate is the maximum airborne concentration below which nearly all individuals could be exposed for up to one hour without experiencing or developing life-threatening health effects. This value is based on the subacute and subchronic inhalational NTP studies in rats, where no deaths were ever associated with concentrations up to 1000 ppm, regardless of length of exposure (NTP, 1986). Moreover, this concentration was not associated with a single case of mortality in any models of acute inhalational exposure. A correction factor of 6 has been applied to account for interspecies variability.

ERPG-2: 50 ppm (206 mg/m^3)

50 ppm of methyl methacrylate is the maximum airborne concentration below which nearly all individuals could be exposed to methyl methacrylate for up to 1 hour without experiencing or developing irreversible or other serious adverse health effects or symptoms that could impair an individual's ability to take protective action is 50 ppm. This value is based on the 1976 NIOSH study in which exposed workers experienced no health effects due to inhalational exposure to methyl methacrylate at 8-hour time weighted average concentrations up to 49 ppm (rounded to 50 ppm) (Cromer and Kronoveter, 1976).

ERPG-1: 17 ppm (70 mg/m³)

17 ppm of methyl methacrylate is the maximum airborne concentration below which nearly all individuals could be exposed for up to one hour without experiencing or developing effects other than mild transient health effects. The basis for this guideline is the 2015 study where healthy volunteers exposed to 50 ppm of methyl methacrylate for 4 hours experienced no adverse health effects other than slight nose irritation (Muttray et al., 2015). To arrive at the ERPG-1 value, a correction factor of 3 was applied to account for intraspecies variability in susceptibility to the irritating properties of methyl methacrylate. Note that this concentration of methyl methacrylate considerably exceeds the odor threshold of 0.05 ppm.

II. History of Methyl Methacrylate ERPGs

This is the first preparation of an ERPG for methyl methacrylate.

III. References

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