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PARTICULATES (N)

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OSHA comments from the January 19, 1989 Final Rule on Air Contaminants Project extracted from 54FR2332 et. seq. This rule was remanded by the U.S. Circuit Court of Appeals and the limits are not currently in force.

CAS: None; **Chemical Formula:** None

OSHA formerly covered all otherwise unregulated particulates under a single 8-hour TWA PEL of 15 mg/m³ (measured as total particulate) and 5 mg/m³ (measured as the respirable fraction). The ACGIH has a TLV-TWA of 10 mg/m³ (as total dust) for particulates having a quartz content of less than 1 percent. OSHA's proposed total particulate PEL for these physical irritants was 10 mg/m³; NIOSH (Ex. 8-47, Table N4) concurred with the proposed limit. In the final rule, OSHA is retaining its 15-mg/m³ total particulate PEL for particulates that are not specifically identified in the Z tables; OSHA is also retaining its 5-mg/m³ respirable particulate limit for these substances. The Agency has decided to retain its existing limits for particulates that are not specifically identified in the Z tables because this group of physical irritants consists of substances, both inorganic and organic, for which substance-specific toxicologic data are not available. For those physical irritants for which specific toxicologic data are available, OSHA has separately identified the substance in Table Z-1-A and has promulgated a 10-mg/m³ 8-hour TWA (measured as total particulate) and a 5-mg/m³ 8-hour TWA PEL (measured as the respirable fraction) in the final rule.

The 8-hour TWA limits of 15 mg/m³ (total particulate) and 5 mg/m³ (respirable fraction) apply to all not-otherwise-regulated particulates (i.e., to those irritants that are not specifically identified in the Z tables). For example, OSHA's limits for corn dust, a particulate not identified in the Z tables or otherwise regulated, are 15 mg/m³ (total dust) and 5 mg/m³ (respirable dust). The Agency believes that other particulates that present physical irritant hazards in the workplace should also be regulated under the final rule's generic total particulate limit of 15 mg/m³.

OSHA believes that good industrial hygiene practice requires that exposures to these particulates be controlled in the workplace to or below the 15-mg/m³ level as an 8-hour TWA to protect workers from the broad range of adverse effects associated with exposure to these substances. In the past, these particulates were often called "nuisance" or "inert" substances. These terms are misleading, however, because exposures to these substances in

the workplace may cause serious and sometimes disabling effects. Further, good industrial hygiene and public health practice require that workplace exposures to particulates be maintained below the level associated with physical irritation, accidents, and respiratory effects.

Several commenters (see, for example, Exs. 3-661, 3-755, 3-1012, 3-1112, and 8-22) submitted comments on OSHA's proposed generic total particulate limit. Most of these participants argued that the proposed reduction in the 8-hour TWA PEL from 15 mg/m³ to 10 mg/m³ was unwarranted because there was, in the opinion of these commenters, no evidence of adverse health effects associated with exposure to these particulates (Exs. 3-755, 3-1012, 3-1112, and 8-22). According to Peter Hernandez of the American Iron and Steel Institute (Ex. 8-22), the effects of such exposures are "short-term and immaterial."

OSHA has responded to these commenters in the final rule by establishing a lower 8-hour TWA total-dust limit of 10 mg/m³ for all particulates having identified health effects in the toxicological literature, and retaining the former 15-mg/m³ total particulate limit for those particulates not specifically linked to health effects other than physical irritation. OSHA finds that good industrial hygiene practice demands, and prudent public health policy supports, effective workplace control over exposure to all particulates. The effects associated with overexposure to particulates in the workplace constitute material impairments of health and functional capacity and include upper respiratory tract irritation, skin injury, eye irritation, and other forms of physical irritation.

The 15-mg/m³ 8-hour TWA total particulate PEL applies to all particulates not otherwise regulated, not just to inorganic dusts. The OSH Review Commission interpreted the Agency's former generic dust standard as applying only to mineral dusts, primarily because this limit was entered on the Z tables under the heading of "mineral dust." The ACGIH and OSHA both had intended this limit to apply to all particulates, organic and inorganic. Exposure to organic particulates at high levels also causes material health impairment, such as throat, skin, and eye irritation, upper-respiratory-tract problems, and the safety hazards caused by distraction in the workplace.

In the final rule, OSHA establishes an 8-hour TWA limit of 15 mg/m³, measured as total particulate, and retains the 5-mg/m³ limit for respirable particulates for all particulates not otherwise regulated. The Agency concludes that these limits will protect workers against the significant safety and health risks associated with exposure to excessive concentrations of these substances, which include reduced visibility, deposits in the eyes, ears, and nasal passages, throat and eye irritation, upper-respiratory-tract problems, skin injury, and other forms of physical irritation. The change in terminology from nuisance dusts to particulates not otherwise regulated clarifies OSHA's intent and also more accurately reflects the fact that exposure to all particulates at levels higher than those being established in this final rule causes material impairment of health and functional capacity in workers experiencing these exposures.

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