

Diesel Particulate Matter (DPM) Regulations for M/NM Mines

1. Regulations for DPM aerosol in Metal/Nonmetal Underground Mines are found in the following Part of 30CFR: a) 46, b) 47, c) 48, d) 56, e) 57, f) 62, or g) 75
2. The standard for DPM aerosol in M/NM mines was published January 19, 2001. True ___ False ___
3. The entire DPM standard for M/NM mines is currently being enforced as originally published. True ___, False ___
4. Mine operators must develop and implement a written DPM-compliance strategy. True ___, False ___
5. Compliance in underground M/NM mines is determined primarily a) by measurements of the DPM concentrations in underground mine work areas, b) by measurements of the DPM concentrations on exposed miners. c) by the use of MSHA-approved engines and DPM and/or control systems on mine equipment.
6. Compliance in underground coal mines is determined primarily by: a) measurements of the DPM concentrations in underground mine work areas, b) measurements on exposed miners, c) by the use of MSHA-approved engines and/or DPM control systems on mine equipment.
7. The PEL for DPM exposure being enforced in M/NM mines in 2004 is equal to an 8-hour average full-shift exposure concentration of: a) 10 micrograms/ m³, b) 400 micrograms/ m³, c) 100 micrograms/m³.
8. MSHA uses an impactor in sampling DPM to: a) collect the DPM, b) collect the respirable particulate matter that is not DPM.
9. Total carbon as measured using the currently accepted DPM sampling method includes carbonate carbon. True ___, False ___
10. MSHA plans to reduce the DPM PEL in 2006 to: a) 30 micrograms/m³, b) 20 micrograms/m³, c) 16 micrograms/m³, or d) 10 micrograms/m³.
11. DPM measurements are not required in underground coal mines. True ___, False ___
12. If personal protective equipment is needed to reduce a miner's exposure to DPM, the miner must be enrolled in a respiratory protection program per ANSI Z88.2 including written SOP's, fit testing, storage/cleaning, training, surveillance etc. True ___, False ___
13. Passive regeneration of a ceramic wall-flow DPM filter refers to: a) burning off collected DPM using an electrical element, b) burning off collected DPM during normal operation of the diesel powered equipment, c) Replacing the filter element.
14. Active regeneration is used when the exhaust temperature is not sufficiently high to effect passive regeneration. True ___, False ___
15. New engine technology may reduce DPM concentrations by as much as 95 %. True ___, False ___
16. Job rotation is an acceptable means of compliance with the M/NM DPM standard. True ___, False ___
17. MSHA enforcement of miner exposure to DPM in M/NM mines is based on personal sampling using a) a personal sampling pump, b) a 10 mm Dorr Oliver nylon cyclone, c) a special cassette containing an impactor and tandem quartz-fiber filter, d) an analytical procedure to measure the "total carbon" content collected on the filter.
18. Total carbon as determined by MSHA is assumed to be equal to the elemental carbon concentration measured multiplied by 1.3 or to the sum of elemental and organic carbon concentrations measured, whichever is lowest. True ___, False ___
19. MSHA citations are only issued when the measured DPM concentration exceeds the limit by a margin, which reduces to less than 5 %, the probability that the concentration is actually equal to or below the limit. True ___, False ___
20. In considering the probabilities of errors associated with DPM sampling and analysis, the 400 microgram/m³ limit is not enforced until MSHA measurements equal or exceed: a) 600, b) 500, c) 480, d) 460, e) 456 for elemental plus organic carbon, f) 448 for elemental carbon times 1.3.
21. In underground M/NM mines, fuel specifications: a) are not required, b) limit the maximum sulfur content to 0.05 %, c) limit fuel additives to those registered with the EPA.
22. Diesel equipment operators in underground M/NM mines must affix a visible and dated tag at any time they note any evidence the equipment may need maintenance (odor, visible smoke, exhaust system defects, engine defects etc.) . True ___, False ___
23. Diesel equipment, tagged by the operator, must be examined by an authorized person a) before using it anymore, b) before the start of the next shift, c) before the end of the next shift a qualified mechanic is scheduled to work.
24. Safety defects on mobile equipment, which make continued operation hazardous to persons, must be repaired: a) immediately, b) before the next shift, c) before the equipment is used again, d) before the end of the next shift a qualified mechanic is scheduled to work.

25. Engines on equipment used in M/NM underground mines have no special requirements under the law. True ____, False ____
26. Engines other than those for ambulance and fire-fighting equipment, added to an underground M/NM mines inventory of engines, must either have an MSHA-Approval tag or meet the EPA emissions specifications. True ____, False ____
27. Annual DPM training is required: a) for all miners, b) for all miners exposed to DPM, c) for all miners who can reasonably be expected to be exposed to DPM.
28. DPM training must include: a) concentrations of DPM measured throughout the mine, b) health risks of DPM exposure, c) control methods in use, d) persons responsible for maintaining DPM controls, e) MSHA contact phone numbers to call in case the air becomes smoky, f) Actions miners must take to ensure proper functioning of controls.
29. Mine operators must monitor for DPM a) each shift, b) weekly, c) monthly, d) annually, e) as often as necessary to ensure compliance.
30. Monitoring which shows overexposure must be followed by: a) moving people out of the section, b) replacing the equipment with cleaner-burning equipment, c) prompt posting of a notice of overexposure, d) prompt completion of corrective action.
31. Operator monitoring: a) must be performed by a mechanical engineer or person designated by him/her, b) must be preceded by prior notice of date, time and location to affected miners and their representatives, c) interested effected miners or their representatives must be offered the opportunity to observe monitoring, d) results must be posted for 30 days beginning within 15 days of receipt, e) results must be retained for 5 years.
32. Mine operators are required to use the MSHA-compliance sampling method for monitoring DPM. True ____, False ____
33. MSHA can issue a citation based on the operator's monitoring: a) if an overexposure is indicated, b) if the mine operator failed to take corrective action in an overexposure situation.
34. Records required include: a) engine inventory, b) engines added to engine inventory, c) fuel purchase records noting sulfur content, d) maintenance log, e) evidence of competence to perform diesel maintenance, f) record of annual training of potentially-exposed miners, g) environmental monitoring records.
35. Access to all records must be given without unnecessary delay to: a) MSHA, b) NIOSH, c) any miner or spouse who requests it, d) the miner's representative.

1)e, 2)T, 3)F, 4)T, 5)b, 6)c, 7)b, 8)b, 9)F, 10)c, 11)T, 12)T, 13)b, 14)T, 15)T, 16)F, 17)all, 18)T, 19)T, 20)e,f, 21)b,c, 22)T, 23)c, 24)c, 25)F, 26)T, 27)b,c, 28)b,c,d,f, 29)e, 30)c,d, 31)b,c,d,e, 32)F, 33)b, 34)all, 35)a,b,d