For an unanswered copy of these questions, [download this PDF file](https://miningquiz.com/quiz/Mine_Gas_Q&A_2.pdf).

1. A noxious gas is \_\_\_\_\_\_\_\_\_, however it can be dangerous if it displaces oxygen.
2. Inert
3. Explosive
4. Non-poisonous
5. Non-explosive
6. \_\_\_\_\_\_\_\_\_ gas is poisonous either by short or long term exposure.
7. A diffused
8. A combustible
9. An inert
10. A toxic
11. Specific gravity is the weight of a ratio of a specific gas compared to the same ratio of:
12. Water
13. Air
14. Oxygen
15. A vacuum
16. \_\_\_\_\_\_\_\_\_ states that the lower the specific gravity, the faster it will diffuse.
17. Graham's Law
18. Boyle's Law
19. Charles' Law
20. Newton's Law
21. The Threshold Limit Value (TLV) of a gas is the amount of a gas exposure that a worker can be exposed to for \_\_\_\_\_\_\_\_\_\_\_ hours a day \_\_\_\_\_\_\_\_\_\_\_ days a week without harmful effects.
22. 12, 6
23. 10, 5
24. 8, 6
25. 8, 5
26. The Short Term Exposure Limit (STEL) is the amount of a gas that a worker can be exposed to for only:
27. 15 minutes
28. 30 minutes
29. 1 hour
30. 8 hours
31. A gas at 1% concentration diffused into an atmosphere of air would equate into \_\_\_\_\_\_\_\_\_\_\_\_ parts per million (PPM).
32. 10
33. 100
34. 1,000
35. 10,000
36. Pure dry air at sea level contains \_\_\_\_\_\_\_\_\_% oxygen and \_\_\_\_\_\_\_\_\_% nitrogen.
37. 16.54, 80.09
38. 19.50, 76.09
39. 20.94, 78.09
40. 78.09, 20.94
41. Pure dry air at sea level contains \_\_\_\_\_\_\_\_\_% argon and \_\_\_\_\_\_\_\_\_% carbon dioxide.
42. 19.50, 78.09
43. 0.03, 0.94
44. 20.94, 78.09
45. 0.94, 0.03
46. The specific gravity of air is:
47. 1.000
48. 1.105
49. .0695
50. 1.529
51. The specific gravity of oxygen is \_\_\_\_\_\_\_\_\_\_, its explosive range is \_\_\_\_\_\_\_\_\_\_.
52. 1.000, 5% to 15%
53. 1.500, non-existent
54. 1.105, non-existent
55. 1.105, 0% to 100%
56. Breathing and heartbeat will stop at \_\_\_\_\_\_\_\_\_\_\_% oxygen.
57. 16
58. 15
59. 11
60. 6
61. The specific gravity of hydrogen is \_\_\_\_\_\_\_\_\_\_\_, thus it is \_\_\_\_\_\_\_\_\_\_\_ than air.
62. .0695, lighter
63. .967, lighter
64. 1.195, heavier
65. 1.524, heavier
66. The explosive range of hydrogen is \_\_\_\_\_\_\_\_\_\_\_% to \_\_\_\_\_\_\_\_\_\_%.
67. 5, 15
68. 4.1, 74
69. 12.5, 74
70. 4.1, 100
71. The ignition temperature of hydrogen is between \_\_\_\_\_\_\_\_\_\_\_º F and \_\_\_\_\_\_\_\_\_\_º F.
72. 4.1, 74
73. 1100, 1380
74. 1100, 1130
75. 1030, 1130
76. Hydrogen gas is produced in a mine by:
77. Applying water to a super hot mine fire
78. Explosions
79. The charging of batteries
80. All of the above
81. How much oxygen is needed to perpetrate an explosion with hydrogen gas?
82. At least 19.50%
83. At least 16.25%
84. At least 15.00%
85. At least 5.00%
86. Hydrogen gas has the smell of rotten eggs.
87. True
88. False
89. The specific gravity of nitrogen is:
90. 78.09
91. 0.0695
92. 1.105
93. 0.967
94. The TLV of nitrogen is \_\_\_\_\_\_\_\_\_\_PPM.
95. 810,000
96. 10
97. 810
98. 5
99. Anything which increases resistance, increases air quantity.
100. True
101. False
102. If changes are made in a fan, which increases pressure differences, air quantity will decrease.
103. True
104. False
105. The single most important factor which determines the resistance of an airway is in the cross-sectional area.
106. True
107. False
108. As the specific resistance of an airway increases the velocity decreases, or power and pressure must increase to maintain the same velocity.
109. True
110. False
111. As the specific resistance decreases, velocity may be increased with the same pressure or the same velocity may be had for less pressure.
112. True
113. False
114. Nitrogen gas will asphyxiate due to an oxygen deficiency.
115. True
116. False
117. Nitrogen gas is NOT found naturally in the atmosphere, but small amounts can be released from the coal seam.
118. True
119. False
120. The specific gravity of carbon monoxide is:
121. 0.695
122. 1.105
123. 0.967
124. 1.529
125. Carbon monoxide is NOT produced by:
126. The incomplete combustion of materials
127. The charging of acid batteries
128. Fire, explosions, or blasting
129. Diesel motors
130. What is the ignition temperature of carbon monoxide?
131. It will not ignite
132. 1030° F.
133. 1100° F.
134. 1130° F.
135. The explosive range of carbon monoxide is from \_\_\_\_\_\_\_\_\_\_% to \_\_\_\_\_\_\_\_\_\_% with at least \_\_\_\_\_\_\_\_\_\_% oxygen present.
136. 5, 15, 12
137. 12.5, 74, 5
138. 12.5, 74, 6
139. 5, 15, 6
140. The TLV of carbon monoxide is \_\_\_\_\_\_\_\_\_\_PPM, the STEL is \_\_\_\_\_\_\_\_\_\_PPM.
141. 50 ppm, 15,000 ppm
142. 5,000 ppm, 400 ppm
143. 400 ppm, 50 ppm
144. 50 ppm, 400 ppm
145. Carbon monoxide displaces oxygen in the hemoglobin of blood.
146. True
147. False
148. Carbon monoxide can be detected in the mine by using:
149. Electronic detectors
150. Squeeze tube detectors
151. Chemical analysis
152. All of the above
153. The specific gravity of carbon dioxide is:
154. 0.555
155. 1.529
156. 0.967
157. 2.264
158. Carbon dioxide has a distinct taste in high concentrations?
159. True
160. False
161. The TLV and STEL values of carbon dioxide are:
162. 50 ppm, 400 ppm
163. 5,000 ppm, 150,000 ppm
164. 50 ppm, 5,000 ppm
165. 5,000 ppm, 15,000 ppm
166. Carbon dioxide is NOT produced from:
167. The oxidation of carbon & organic materials
168. The exhaling of breathed air
169. Stagnant acid mine water
170. The complete combustion of material
171. The chemical symbol of methane is:
172. CO2
173. CO
174. CH2O
175. CH4
176. Methane is \_\_\_\_\_\_\_\_\_\_\_ than air, its specific gravity is \_\_\_\_\_\_\_\_\_\_\_.
177. Lighter, 0.967
178. Lighter, 0.555
179. Lighter, 0.0695
180. Heavier, 1.529
181. The explosive range of methane is between \_\_\_\_\_\_\_\_\_\_\_% and \_\_\_\_\_\_\_\_\_\_\_%.
182. 2, 10
183. 5, 10
184. 5, 15
185. 10, 20
186. \_\_\_\_\_\_\_\_\_\_% of oxygen is needed to burn or explode methane.
187. 6
188. 12
189. 15
190. 19.5
191. The ignition temperature of methane is \_\_\_\_\_\_\_\_\_\_º F to \_\_\_\_\_\_\_\_\_\_º F, depending on the humidity.
192. 1100, 1150
193. 1030, 1130
194. 1030, 1100
195. 1100, 1380
196. Methane is formed by the decomposition of organic matter in the presence of \_\_\_\_\_\_\_\_\_\_\_, and in the absence of \_\_\_\_\_\_\_\_\_\_\_.
197. Oxygen, water
198. Carbon, oxygen
199. Water, carbon
200. Water, oxygen
201. High concentrations of methane will have no effect on the human body.
202. True
203. False
204. The mine fan shall create enough ventilating pressure so that the air current does NOT overcome the mine resistance.
205. True
206. False
207. Without an increase in the quantity of air in circulation, a decrease in mine resistance will NOT save any power.
208. True
209. False
210. Mine fans should be reversible so that the air current can be reversed in case of fire or explosion.
211. True
212. False
213. Where multiple fans are used, neutral areas are common and are permitted.
214. True
215. False
216. In mines considered to be wet or making water, undercasts are generally preferred to overcasts.
217. True
218. False
219. The chemical formula for hydrogen sulfide is:
220. H2S
221. H2S2
222. HS2
223. HS4
224. Another name for hydrogen sulfide is:
225. Black damp
226. White damp
227. Stink damp
228. Fire damp
229. Hydrogen sulfide has a bitter taste and a smell of rotten eggs.
230. True
231. False
232. Hydrogen sulfide has an ignition temperature of \_\_\_\_\_\_\_\_\_\_\_º F \_\_\_\_\_\_\_\_\_\_% oxygen is needed to ignite it.
233. 1100, 6
234. 1380, 12
235. 700, 0
236. 1030, 5
237. Hydrogen sulfide has a TLV of \_\_\_\_\_\_\_\_\_ PPM and a STEL of \_\_\_\_\_\_\_\_\_ PPM.
238. 150 ppm, 10,000 ppm
239. 5,000 ppm, 15,000 ppm
240. 500 ppm, 400 ppm
241. 10 ppm, 15 ppm
242. The explosive range of hydrogen sulfide is between \_\_\_\_\_\_\_\_\_\_\_% and \_\_\_\_\_\_\_\_\_%.
243. 4.3, 45
244. 4.1, 74
245. 5, 15
246. 2.4, 83
247. Hydrogen sulfide will cause paralysis of the \_\_\_\_\_\_\_\_\_ system after only a few inhaled breaths.
248. Respiratory
249. Olfactory
250. Nervous
251. Circulatory
252. Which is NOT a source of hydrogen sulfide gas?
253. Gob fires
254. Rotting mine timbers
255. Stagnant acid mine water
256. Blasting of some sulfide ores
257. Hydrogen sulfide can be smelled in minute concentrations.
258. True
259. False
260. The chemical formula for nitrogen dioxide is:
261. NO
262. NO3
263. N2O2
264. NO2
265. Nitrogen dioxide has an odor of rotten eggs.
266. True
267. False
268. The specific gravity of nitrogen dioxide is:
269. 0.555
270. 1.589
271. 0.9107
272. 1.529
273. Nitrogen dioxide has an orangish, yellow color in high concentrations.
274. True
275. False
276. Nitrogen dioxide is produced by:
277. Blasting
278. Diesel engines
279. Electric arc welding
280. All of the above
281. The ignition temperature of nitrogen dioxide is:
282. 1030° F.
283. 1130° F.
284. 1180° F.
285. It will not ignite
286. Nitrogen dioxide has a TLV of \_\_\_\_\_\_\_\_\_ PPM and a STEL of \_\_\_\_\_\_\_\_\_ PPM.
287. 50 ppm, 400 ppm
288. 5,000 ppm, 15,000 ppm
289. 5 ppm, 10 ppm
290. 10 ppm, 50 ppm
291. Nitrogen dioxide forms nitric acid when it comes in contact with \_\_\_\_\_\_\_\_\_\_\_ causing \_\_\_\_\_\_\_\_\_.
292. The blood’s hemoglobin, heart failure
293. The central nervous system, a loss of consciousness
294. The skin, a severe rash
295. The mucus membranes & respiratory system, pulmonary edema
296. The chemical symbol for sulfur dioxide is:
297. S2O4
298. SO2
299. SO4
300. S2H3O2
301. Sulfur dioxide has:
302. A strong sulfur odor
303. A smell of rotten eggs
304. A smell of burnt gunpowder
305. No detectable odor
306. Sulfur dioxide has a slight sweet taste.
307. True
308. False
309. The specific gravity of sulfur dioxide is:
310. 1.589
311. 1.191
312. 2.264
313. 0.9107
314. What is NOT a source of sulfur dioxide?
315. Stagnant mine water
316. The burning of sulfide ores
317. Diesel fumes
318. Gob fires
319. Sulfur dioxide has an extremely low ignition temperature.
320. True
321. False
322. Sulfur dioxide is harmful to the body, it will create sulfuric acid in the mucus membranes causing pulmonary edema.
323. True
324. False
325. Sulfur dioxide can be detected with:
326. Electronic detectors
327. Squeeze tube detectors
328. Chemical analysis
329. All of the above
330. What is the chemical formula for acetylene.
331. CH4
332. C2H2
333. C2H4
334. C4H2
335. Which best describes the odor of acetylene?
336. A garlic aroma
337. A strong sulfur odor
338. An odor of rotten eggs
339. No detectable odor
340. Acetylene has a specific gravity of:
341. 2.264
342. 1.529
343. 0.967
344. 0.9107
345. How is acetylene formed?
346. Methane is heated or burned in a low oxygen atmosphere
347. Methane is heated or burned in a high oxygen atmosphere
348. Methane is mixed with hydrogen in the presence of oxygen
349. Methane is mixed with hydrogen in the absence of oxygen
350. The explosive range of acetylene is \_\_\_\_\_\_\_\_\_\_\_\_% to \_\_\_\_\_\_\_\_\_\_\_%.
351. 5, 15
352. 4.1, 74
353. 2.4, 83
354. 12.5, 74
355. The ignition temperature of acetylene is \_\_\_\_\_\_\_\_\_\_\_\_° F.
356. 518
357. 581
358. 555
359. 1018
360. Acetylene will asphyxiate due to the displacement of oxygen.
361. True
362. False
363. The word ‘damp’ as used in mining, is derived from the German word ‘damph’ meaning gas or air.
364. True
365. False
366. \_\_\_\_\_\_\_\_\_\_\_ damp is carbon dioxide and nitrogen in an oxygen-deficient atmosphere which will cause suffocation.
367. White
368. Fire
369. Black
370. Stink
371. White damp is another name for:
372. Methane
373. Hydrogen sulfide
374. Carbon dioxide
375. Carbon monoxide
376. Methane gas is also known as \_\_\_\_\_\_\_\_\_\_\_ damp.
377. After
378. Fire
379. Black
380. White
381. The gas products of a mine explosion are known as:
382. Black damp
383. Fire damp
384. After damp
385. Stink damp
386. Nitric oxide with a chemical formula of \_\_\_\_\_\_\_\_\_ has a TLV of \_\_\_\_\_\_\_\_\_ PPM.
387. NO2, 40
388. N2O2, 25
389. NO, 20
390. NO4, 20
391. Nitric oxide is produced by:
392. Diesel combustion
393. Mine fires or explosions
394. Rotting timbers in the mine
395. Stagnant acid mine water
396. An oxygen-deficient atmosphere is one in which the oxygen level is below \_\_\_\_\_\_\_\_\_\_%.
397. 20.9
398. 19.5
399. 19
400. 16.25