

It should be taken into account that respiratory protection is falling into category III (protection against mortal danger) according to Personal Protective Equipment Directive 89/686/EEC. Very careful risk assessment should be made prior to selecting the right type of respiratory protection. Attention should be given to the following main aspects:

OEL - Occupational Exposure Limit (is an upper limit on the acceptable concentration of a hazardous substance in workplace air for a particular material or class of materials)

TWA - 8 hours Time Weighted Average (it is used as the average exposure to a contaminant to which workers may be exposed without adverse effect over a period, such as in an 8-hour day or 40-hour week (an average work shift). They are usually expressed in units of ppm (volume/volume) or mg/m³)

STEL - Short-Term Exposure Limit (is a limit value above which exposure to a substance should not occur and usually relates to a 15 minute reference period. The aim of a STEL is to prevent adverse health effects and other unwanted effects due to peak exposure that may not be controlled by the application of an 8 hour TWA limit)

After air monitoring the Measured Exposure Level should be compared to Occupational Exposure Limit. Measured exposure level should be divided by OEL to get a Respiratory Hazard Level.

Based on calculations and situation appropriate Respirator with greater APF (Assigned Protection Factor) should be selected.

**Respiratory protection
product categories
included in this section**

- disposable respirators
- face masks
- cartridges & filters

Substance	Filter Type (Color Code) Type of hazard	Type of protection
Gas and Vapour EN 14387 & EN 405	A (Brown) - Organic Vapors with boiling point > 65°C and good warning properties B (Grey) - Inorganic gases and vapors E (Yellow) - Acid gases and vapors K (Green) - Ammonia and organic ammonia derivatives P (white) - Particulate	Half face masks (use with special goggles) / Full face masks equipped with filters marked according to type of hazard. Depending on situation powered air purifying respirators, airline & escape respirators can be used.
Dusts, Mists, Metal fumes, Particles EN 143 and EN 149	P1, P2, P3 (color code White) Protection against particulates	FFP1, FFP2, FFP3 disposable / limited life respirators or half face / full face masks with cartridges marked as amongst others as P (Particulate). E.g. ABEK filters.
Gas and Vapor EN 14387	AX - Organic compounds with boiling points < 65°C and good warning properties	Full face mask equipped with filters marked according to type of hazard. Depending on situation powered air purifying respirators, airline & escape respirators can be used.

European Standards for respiratory protection

EN 136	Respiratory protective devices. Full face masks. Requirements, testing, marking.
EN 137	Respiratory protective devices. Self-contained open-circuit compressed air breathing apparatus with full face mask. Requirements, testing, marking.
EN 140	Respiratory protective devices. Half masks and quarter masks. Requirements, testing, marking.
EN 14387 (previous EN 371 & EN 141)	Respiratory protective devices. Gas filter(s) and combined filter(s). Requirements, testing, marking.
EN 143	Respiratory protective devices. Particle filters. Requirements, testing, marking.
EN 145	Respiratory protective devices. Self-contained closed-circuit breathing apparatus compressed oxygen or compressed oxygen-nitrogen type. Requirements, testing, marking.
EN 12941 (previous EN 146)	Respiratory protective devices. Powered filtering devices incorporating a helmet or a hood. Requirements, testing, marking.
EN 12942 (previous EN 147)	Respiratory protective devices. Power assisted filtering devices incorporating full face masks, half masks or quarter masks. Requirements, testing, marking.
EN 149	Respiratory protective devices. Filtering half masks to protect against particles. Requirements, testing, marking.
EN 14594 (previous EN 270 & EN 1835)	Respiratory protective devices. Continuous flow compressed air line breathing apparatus. Requirements, testing, marking.
EN 402	Respiratory protective devices. Lung governed demand self-contained open-circuit compressed air breathing apparatus with full face mask or mouthpiece assembly for escape. Requirements, testing, marking.
EN 405	Respiratory protective devices. Valved filtering half masks to protect against gases or gases and particles. Requirements, testing, marking.