

# Individual respiratory organs protective e devices

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Practice for 2 gr students

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- Gas masks
  - Respirators
  - Self-rescue devices
  - Some primal means

Recent respirators are available to ensure appropriate protection for respiratory organs and eyes from harmful impact of poisoning agents.

# Types of gas masks according to their working principle

- ✓ filtering protective mask – air purifying respirator
- ✓ self-contained breathing apparatus

## Air-purifying respirator

the purpose – to defense  
respiratory organs and eyes  
from harmful impact of  
aerosols, chemical  
poisoning agents,  
radioactive materials

the working principle of air-  
purifying respirator based  
on the working principle of  
water box.

water box: absorbent coal  
antismoke filter



# The structure of air-purifying respirator

- Filter box and face part
- Hopcalite cartridge
- 5 heights of face helmets:

63 sm – 0 size

63,5-65 sm – 1 size

65,5-68 sm - 2 size

68,5-70,5 sm– 3 size

71,5 and more – 4 size

# 3 ways of absorption

- 1) adsorption – is the adhesion of molecules of gas to some solid surface (activated coal in respirators)
- 2) chemisorption – chemical adsorption - is the absorption of poisoning agents with chemical reaction
- 3) catalysis - is the process of modifying a chemical reaction with the use of a catalyst.

# Self-contained breathing apparatus

isolates respiratory organs from outer air. The act of breathing arise from disengaging air from oxygen cylinder

2 types:

1. Pneumatogen: regenerating cartridge and reservoir bag

2. Pneumatophore: balloons with compressed air compound



# Self-rescue device

- Short-term protection from warfare poisoning agents during emergency escape from contaminated area
- regenerating cartridge and reservoir bag with pressure isolation valve





# Respirator

- Defense from aerosols and dust
- Disposable and re-usable

