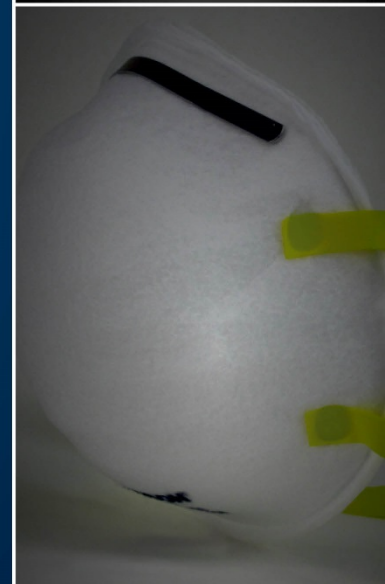
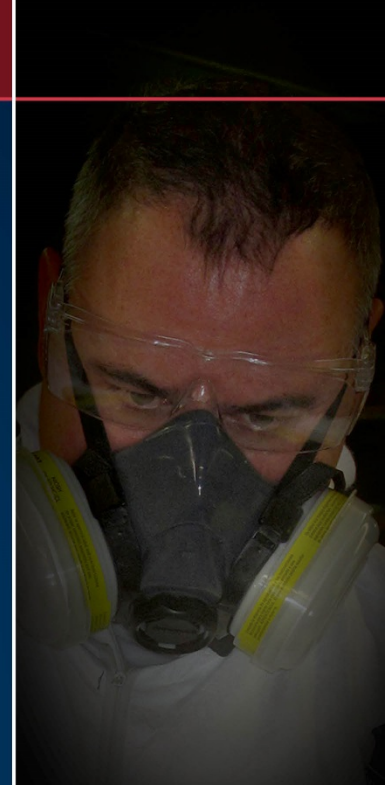




Respiratory "101"

April 2016



Respiratory "101"

NIOSH Approved Products

The classification of respirators can be divided into three categories:

1. Air-Purifying (Negative Pressure):

A. Particulate filtering face piece respirators - Sometimes referred to as "disposable" respirators because the entire respirator is discarded when it becomes unsuitable for further use due to considerations of hygiene, excessive resistance, or physical damage.

These are also commonly referred to as "N95's."

B. Half masks (Elastomeric)

- Maintenance free (disposable)
- Reusable with replaceable cartridges

C. Full face (Elastomeric)

- Reusable with replaceable cartridges

2. PAPR:

- Powered air-purifying respirators (PAPRS)
 - Battery powered blower moves the air through the filters.

3. Air Supplied:

- Air supplied to face piece though compressed air.

Types Of Respirators

Major Types of Respirators

Air-purifying respirators, which remove contaminants from the air.



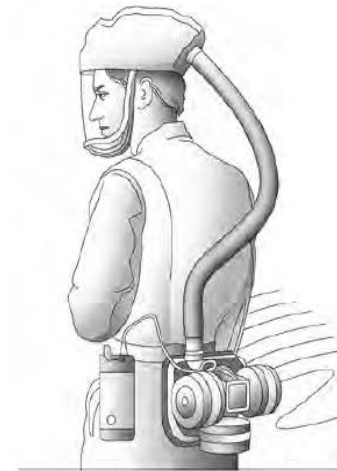
Half mask/Dust mask
APF=10
Needs to be fit tested



Half mask (Elastomeric)
APF=10
Needs to be fit tested



Full facepiece (Elastomeric)
APF=50
Needs to be fit tested



**Loose-Fitting Powered
Air-Purifying Respirator (PAPR)**
APF= 25



**Hood Powered Air-Purifying
Respirator (PAPR)**
APF= 25

www.osha.gov/Publications/3352-APF-respirators.pdf

Respiratory "101"

NIOSH Classifications-Particulate Filters

- **N95** Filters at least 95% of airborne particles. Not resistant to oil.
- **Surgical N95 Respirator** A NIOSH-approved N95 respirator that has also been cleared by the Food and Drug Administration (FDA) as a surgical mask.
- **N99** Filters at least 99% of airborne particles. Not resistant to oil aerosols.
- **N100** Filters at least 99.97% of airborne particles. Not resistant to oil aerosols.
- **R95** Filters at least 95% of airborne particles. Somewhat resistant to oil aerosols. Time use limitation apply.
- **P95** Filters at least 95% of airborne particles. Strongly resistant to oil aerosols and is non-degrading.
- **P99** Filters at least 99% of airborne particles. Strongly resistant to oil aerosols and is non-degrading.
- **P100** Filters at least 99.97% of airborne particles. Strongly resistant to oil aerosols and is non-degrading.

Dust Fibers, Fumes, Mists, Gases and Vapors

- **Dusts** and fibers are solid particles that are formed or generated from solid materials through mechanical processes such as crushing, grinding, drilling, abrading or blasting. Examples are lead, silica, and asbestos.
- **Fumes** are also solid particles that are formed when a metal or other solid vaporizes and the molecules condense (or solidify) in cool air. Examples are metal fumes from smelting or welding. Fumes also may be formed from processes such as plastic injection or extrusion molding.
- **Mists** are tiny droplets of liquid suspended in the air and are also particulates. Examples are oil mist produced from lubricants used in metal cutting operations, acid mists from electroplating, and paint spray mist from spraying operations.
- **Gases** are materials that exist as individual molecules in the air at room temperature. Examples are welding gases, such as acetylene and nitrogen, and carbon monoxide produced from internal combustion engines.
- **Vapors** are the gaseous form of substances that are normally in the solid or liquid state at room temperature and pressure. They are formed by evaporation. Most solvents produce vapors. Examples include toluene and methylene chloride.

Filters for Particles

Types of Particulates

- **Dusts** Solid particles usually generated by mechanical stress
- **Fumes** *Solid particles* generated by condensing a gas or by chemical reaction, usually refers to metals
- **Mists** Suspended *liquid* droplets



P95 Filter Pad



P100 with Gas Filter



P100



P100

Cartridges and Canisters for Gases and Vapors

NIOSH Approval is Issued for Classes of Gases and Vapors







- *Organic vapors*
- *Acid gases*

NIOSH Approval is Issued for Specific Gases

- Ammonia
- Methylamine
- Chlorine
- Sulfur Dioxide
- Hydrogen Chloride
- Hydrogen Sulfide
- Formaldehyde
- And others

Identification of Cartridges and Canisters

Labels are Universally Color Coded

Type of Cartridge	Label Color
Organic Vapors	 Black
Acid Gases	 White
Organic Vapors and Acid Gases	 Yellow
Ammonia and Methylamine	 Green
Any Other Type of Gas or Vapor not Listed	 Olive
P100	 Magenta

Always read the NIOSH Approval Label to verify that the cartridge or filter on your respirator is approved for the contaminant in the work place!

Regulatory Requirements

The Selection, Use, and Maintenance of Respirators in the US is Regulated by:

- Occupational Safety and Health Administration (OSHA)
- Mine Safety and Health Administration (MSHA)
- Environmental Protection Agency (EPA)
- Nuclear Regulatory Commission (NRC)

Respirators must be used when effective engineering controls are not feasible or while they are being instituted.

Respirator Selection Factors

- **Use conditions** (e.g. grinding, using jackhammer, asbestos or lead abatement, painting)
- **Contaminant type** (known or unknown)
- Physical/chemical/toxicological properties of contaminant
- Occupational **exposure** limits (e.g. OSHA, PEL, NIOSH, REL)
- **Immediately dangerous** to life or health concentration
- **Oxygen deficient atmosphere** (<19.5% O₂ by volume)
- Entry or escape
- Expected concentration of each respiratory hazard
- **Eye irritation** potential
- **Environmental factors**, such as presence of **oil aerosols**
- NIOSH link: www.cdc.gov/niosh/topics/respirators/

Respiratory Protection Program

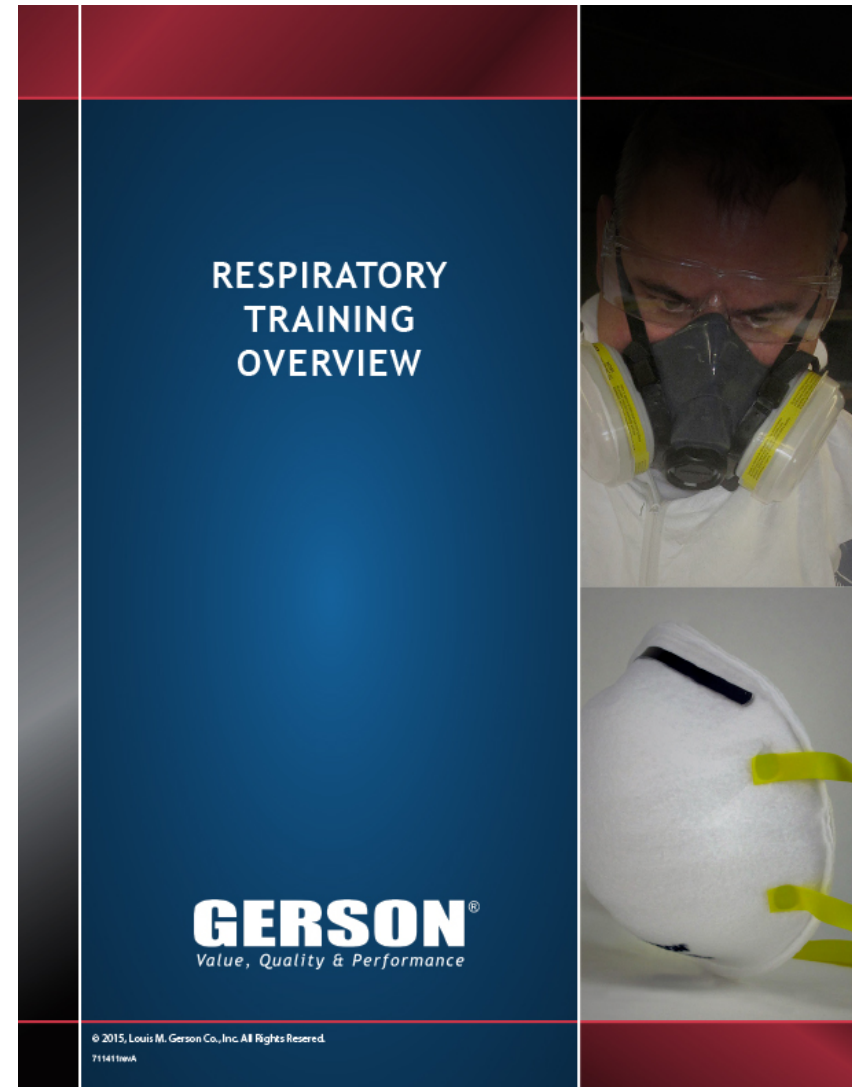
A Complete Written Program Which Includes:

- Maintenance, inspection, cleaning, storage and evaluation of the respirator
- Use of the respirator in accordance with the manufacturer's instructions
- Fit testing
- Regular worker training
- Medical evaluation
- Environmental monitoring

OSHA mandated as employer responsibility.

Train the Trainer Program

Provides Outline
and Guidance to
OSHA-Required
Fit Testing



Gerson QLFT Fit Test Kit (Qualitative Fit Test)

Reasons for Fit Testing

- To select brand, model and size of respirator for each user that will provide proper fit.
- OSHA requirement - 1910.134(f)(1) - (8) and Appendix A.

Fit Testing Definition

The use of a challenge agent to evaluate the face to respirator face piece seal on an individual.



Train the Trainer Program

Provide Complete
Instructions
For Administering
OSHA-Approved
Qualitative Fit Test



Respirators & Accessories

Gerson Company offers a full line of respirators and accessories designed to meet various needs:

- Disposable particulate respirators
- Disposable particulate respirators with exhalation valve
- Signature “One Step” cartridge respirators
- “Professional Series” Silicone Half Masks
 - Cross-linked polymer, not a liquid oil or aerosol. Non-transferrable
- Signature “Select” ½ mask cartridge respirators
- Full face mask respirator-Silicone rubber and TPE
- Full assortment of cartridges
- Fit Test Kits
- Accessories

Gerson Full Face Respirator

The Full Face Offers

- Silicone rubber and TPE Options
- One Size Fits All
 - *1 sku vs. 3 skus*
- Comfortable full face design
- Low maintenance and easy to clean
- Lightweight
- Wraparound lens for excellent field of vision
- Full size nose cup reduces lens fogging
- Can be used with the full assortment of Gerson cartridges which are interchangeable with the Gerson half mask.

Full Line of Accessories for Incremental Sales.



Signature "One-Step" Respirator

- Completely Assembled and Individually Packed in Re-sealable 4-Color Foil Bag
- Organic Vapor/P-95 Filter
 - *Competitors filter-n95 or r95*
- Bonus Hygiene Guard
 - Keeps Mask Clean and Shaped
 - Most Competitors NOT using Hygiene Guard
- Newly Redesigned Foil Bag Calling Out Features & Benefits



One-Step Advantage

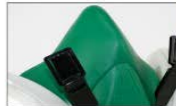


ONE-STEP ADVANTAGE



Lower Cost to Use

"P" level, non-degrading filter approved for multiple shifts!



Softer & More Comfortable

New softer fit TPE full elastomer nose bridge.



Bonus Hygiene Guard

Bonus hygiene guard keeps mask clean and shaped for longer use.



More Durable

Made with rugged Engineering-grade ABS plastic frame and cartridges.



Packaging

Reusable Double-sealed foil package for mask protection.



Half Mask and Cartridges

Gerson Half Mask

- Silicone rubber and TPE Options
- Available in Small, Medium and Large Sizes
 - Silicone (Medium and Large only)
- Includes Bonus Hygiene Guard

Cartridges

- Organic Vapor
- Acid Gas
- Organic Vapor/Acid Gas
- Ammonia/Methylamine
- Formaldehyde
- Multi-Gas
- Any Gas Cartridge Combination with P100 Particulate Filter
- P100 "Pancake" Filters
- P100 "Pancake" with OV/AG Nuisance Level Relief



TPE Half Mask

Gas and P100



P100



Silicone Rubber Half Mask



Acid Gas Cartridge

Gerson "Smart Masks" -Falcon

Incredible Comfort!

- Ultra-soft Inner Layer
- Soft Foam Nosepiece
- Durable, Ultrasonically Welded Non-Latex Head Bands
- No Uncomfortable Pressure Points
- Adjustable Integrated Nosepiece
- Flexible Contoured Edges Contribute to Better Fit



Unique, Patented Design!

- A traditional 3D cup shaped respirator with away-from-the-face comfort-yet folds flat for easy storage and portability.
- Patented side panels provide added surface area that lowers breathing resistance up to 40% over traditional molded respirators.

