

PPE Requirements for Site

Purpose and Scope	2
Responsibilities	2
Personal Protective Equipment Program	2
PPE Quick Reference Chart	3
Eye and Face Protection	3
Safety Glasses	3
Goggles	4
Face Shields	5
Hearing Protection	5
Earplugs/Earmuffs	5
Head Protection	6
Hand Protection	6
Leather-Palmed Work Gloves	7
Welding-Style Leather Gloves	7
Cryogenic Insulated Gloves	7
Low Voltage Electrical Gloves	8
High Voltage Electrical Gloves	8
Neoprene Rubber Gloves	8
Protective Footwear	8
Protective Clothing	9
Leather Welding Jacket	9
Chemical Sleeve Apron	9
Nomex Clothing	10
Respiratory Protection	10
Fall Arrest and Restraints	12
Body Harnesses and Lifelines	12
Seat Belts and Restraints	13
Forms and Attachments	13
Attachment(s):	
PPE Quick Reference Chart	
Welding and Cutting Lens Shades	

Purpose and Scope

Purpose	This chapter defines the requirements for Personal Protective Equipment (PPE) at SITE NAME, based on the results of the PPE risk assessment for the site.
Scope	This chapter applies to all employees, temporary employees, visitors and contractors of the Linde facility at SITE NAME.

Responsibilities

Location Manager or designee	The Location Manager or designee will have the following responsibilities: <ul style="list-style-type: none">• See IMS-27-03 : The Site Manager's PPE Responsibilities.
All employees	All employees must : <ul style="list-style-type: none">• Determine and utilize the correct PPE to be worn at all times.• Report any inconsistencies with Linde policy or the PPE program.• Participate in an annual review of the PPE program.

Personal Protective Equipment Program

About the PPE program	Linde is committed to a safe workplace. Personal Protective Equipment (PPE) is crucial for preventing an injury, and is one component of an effective safety and health program. A PPE Hazard Assessment has been conducted to identify site-specific PPE needs, and this program includes the results of that assessment.
PPE program application	<p>This program applies to all employees, contractors and visitors. The following program is not intended to be all-inclusive. Work falling under Hazardous Work Permit guidelines, such as line breaking, lockout/tagout, elevated work, excavation work, hot work, electrical work or confined space entry will be evaluated for appropriate PPE based on the particular job and documented on the permit before work begins.</p> <p>Each employee must recognize and be responsible for the control of his or her own personal safety. Employees are expected to remind each other of site PPE requirements and notify management of intentional violation.</p> <p>Management will provide all personal protective equipment for Linde employees, temporary employees and visitors.</p>

Visitors	<p>Casual visitors must wear safety glasses with permanent side shields. Head protection, hearing protection and other appropriate PPE will be provided and worn as defined in this chapter. Fully enclosed low heel footwear must be worn in all areas outside of the office. Visitors not performing work can wear regular shoes, although it is recommended they wear safety shoes.</p> <p>Visitors may wear contact lenses with safety glasses that have permanent side shields. However, anyone performing repair, maintenance or installation work outside the main office must wear all specified PPE and they are not allowed to wear contact lenses without safety glasses that have permanent side shields.</p>
Contractors	<p>Contractors must provide their own personal protective equipment. Contractors must comply with Linde policy and all regulatory requirements for use of all PPE. Management will be notified immediately of any contractor or contractor employee that does not adhere to this program.</p>
Program review	<p>An annual review of this chapter must be completed with all employees and also when the chapter is updated. Training will be provided to all employees on the need for, use, care, cleaning and maintenance of all PPE. All employees are encouraged to submit suggestions to improve the site PPE Program.</p>
Program violations	<p>Compliance with this chapter is mandatory. Violation of these standards may result in disciplinary action up to and including discharge. Contract employees not adhering to this policy will be subject to removal from the site.</p>

PPE Quick Reference Chart

Determining correct PPE	<p>For a quick reference to the site's PPE requirements broken down by activity, see the <i>PPE Quick Reference Chart (see attachment)</i>. This chart is in a printable PDF format.</p>
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Eye and Face Protection

Inspection, maintenance and use	<p>For complete information about the inspection, maintenance and use of safety glasses, goggles and face shields, see <i>IMS-27-07 : Eye & Face Protection</i>.</p>
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Safety Glasses

Safety glasses specifications	<p>Safety glasses with permanent side shields must be worn in all areas, and whenever there may be exposure to eye injury. Safety glasses must meet ANSI Standard Z87.1 standards.</p>
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Corrective lenses Employees who wear corrective lenses will be provided with prescription safety glasses that have permanent side shields meeting ANSI Z87.1 standards. Prescription safety glasses with permanent side shields will be provided at no charge to the employee when exams indicate a change in prescription is necessary. Prescription safety glasses purchased without permanent side shields will not be reimbursed.

Note: Contact lenses **must not** be worn in mandatory eye-protection areas. Issued prescription safety glasses **must** be worn.

Area requirements

Safety glasses with permanent side shields **must** be worn in the following areas:

- In all areas of the plant outside the main office or the control room.
- In maintenance garages and production shops.
- during all loading and unloading operations.
- When required at customer locations.

Note: Safety glasses are not required while driving on public roads, however, they **must** be kept in vehicles at all times.

Goggles

Splash goggle specifications

Splash goggles with indirect ventilation meeting ANSI Z87.1 standards will be worn as necessary.

Task requirements

Goggles over safety glasses with permanent side shields **must** be worn during the following operations:

- When working in positions that would cause dirt, debris, etc. to fall into the face, for example working under a truck or trailer, or other maintenance activities.
- Using solvents, such as trichloroethane (Safety Kleen solvent).
- Handling insulation, catalyst, adsorbents or when dust is present.
- Working in positions that would cause dirt or debris to fall into the face, for example working under a truck or trailer.
- Changing, switching chemical pumps.
- Changing out chemical drums.
- Mixing chemical solutions.
- Operating a power washer.
- When spray painting.
- Burning or cutting with an acetylene torch, use welding (cutting) goggles with shaded lenses.

Note: For specific shade required, see *Welding and Cutting Lens Shades (see attachment in IMS-26-18-GAM)* in the chapter Hot Work.

Face Shields

Face shield specifications Face shields meeting ANSI Z87.1 standards will be worn over safety glasses with permanent side shields and/or goggles.

General requirements Face shields **must** be worn over safety glasses with permanent side shields and/or goggles during the following operations or under the following conditions:

- When handling liquid solvents, caustics, acids, acetone, isopropanol, hydrogen peroxide and any other hazardous liquid chemical, corrosive and highly toxic chemicals, including cooling water treatment chemicals.
 - Specifically, but not limited to, handling sulfuric acids, sodium hydroxide and sodium hypochlorite.
- When conducting electrical inspection and testing, where there is the potential for metal safety glasses to come in contact with energized systems.
- When withdrawing liquid argon or liquid nitrogen from a cryogenic tank.
- When power brushing, grinding or chipping.
- Operating a sand blaster, grinder or drill.
- During welding operations wear a welding hood with the recommended shade of lens.

Note: Safety glasses or goggles under the welding hood are not required.
- During trailer and railcar loading and unloading.
- Racking out a breaker – Use the switchers hood and hard hat.

Hearing Protection

General requirements Hearing protection **must** be worn in all areas of the plant where high noise levels are anticipated or highly likely. Hearing protection **must** be worn to reduce the noise exposure below 85 dBA. Where hearing protection is required, signs **must** be posted.

Note: Both earplugs and earmuffs provide suitable hearing protection, and users will be given a choice between either type.

Inspection, maintenance and use For complete information about the inspection, maintenance and use of earplugs and earmuffs, see [IMS-27-06: Hearing Protection](#).

Earplugs/Earmuffs

Earplug/ Earmuff specifications Earplugs/earmuffs meeting ANSI S3.19-1974 standards are required. Approved earplugs may be purchased from an authorized vendor so long as the ear protection complies with ANSI standard S3.19-1974.

Area requirements Earplug/earmuff hearing protection **must** be worn when entering and remaining in Lancaster Plant Area.

Task requirements Earplug/earmuff hearing protection **must** be worn during the following job tasks:

- When using high-pitched, noisy machinery, such as a drill or portable air compressor.
- Performing a regeneration setup.
- Using pneumatic tools.
- When power brushing, grinding or chipping.
- Blowing down high-pressure vessels, such as trailers/railcars.
- While loading and unloading trailers/railcars.
- Hammering.
- Operating the tractor, forklift, & mobile crane.
- Using the lawn mower.

Head Protection

Inspection, maintenance and use For complete information about the inspection, maintenance and use of hard hats, see [IMS-27-11 : Head Protection](#).

Head protection Hard hats meeting ANSI Z89.1 standards will be worn as necessary.

General requirements Hard hats **must** be worn in all areas except offices, control rooms, shop areas or garages parking lots and while driving a motor vehicle. In addition, the following tasks require head protection:

- Where construction is being conducted in a specific area.
- Where cranes or hoists are being operated.

Hand Protection

Inspection, maintenance and use For complete information about the inspection, maintenance and use of gloves, see [IMS-27-13 : Hand Protection](#).

Leather-Palmed Work Gloves

Leather-palmed work glove specifications Approved leather-palmed work gloves may be purchased from the approved national contract vendor.

Task requirements Leather-palmed or brown jersey work gloves **must** be worn during the following operations:

- When power brushing, grinding or chipping (leather-palmed)
- When handling solvents, oil, and grease
- Spray painting (brown jersey)
- Material handling (leather-palmed)
- Using tools and equipment (leather-palmed)
- Operating a drill (leather-palmed)
- Trailer loading and unloading (leather-palmed).

Welding-Style Leather Gloves

Leather welding style glove specifications Approved welding-style leather gloves are available from the approved national contract vendor.

Task requirements Welding-style leather gloves **must** be used for the following operations.

- Any type of welding operation, such as Arc, MIG, TIG, etc., where the hands are in proximity to the weld.
- Cutting or brazing using an acetylene torch.

Cryogenic Insulated Gloves

Cryogenic insulated glove specifications Approved cryogenic insulated gloves are available from the approved national contract vendor. As a minimum leather palm style work gloves **must** be used when working on any cryogenic line or process.

Task requirements Cryogenic insulated gloves **must** be used when withdrawing cryogenic liquid.

Low Voltage Electrical Gloves

Low voltage electrical glove specifications Low voltage electrical gloves are available from the approved national contract vendor.

General requirements Low voltage electrical gloves **must** be worn when working on or near live electrical equipment up to 500V AC with the issuance of an HWP.

High Voltage Electrical Gloves

High voltage electrical glove specifications High voltage electrical gloves are available from the approved national contract vendor.

General requirements High voltage electrical gloves **must** be worn when working on or near live electrical equipment over 500V AC with the issuance of an HWP.

Neoprene Rubber Gloves

Neoprene rubber glove specifications Approved neoprene rubber gloves may be purchased from the approved national contract vendor.

Task requirements Neoprene rubber gloves **must** be worn when handling liquid solvents, acids or caustics in the maintenance shop or water treatment area.

Protective Footwear

Inspection, maintenance and use For complete information about the inspection, maintenance and use of safety shoes and boots, see [IMS-27-14 : Protective Footwear](#).

Reimbursement Production employees will be reimbursed for the purchase of two pairs of safety shoes. After initial purchase of shoes, they will be replaced/reimbursed on an as needed basis with the approval of the Operations Manager. Safety-toed rubber boots may be purchased from Lab Safety or other vendor so long as they comply with ANSI standard Z41.4, classification 75 or 100.

Footwear specifications Safety-toed shoes meeting Linde standard and ANSI Standard Z 41.1 classification 75 or 100 **must** be worn in all areas and at all times, except in the main office.

Note: Steel Toed tennis shoes of the type with ventilation cutouts may not be worn.

Task requirements Employees performing or supervising the following operations are required to wear steel-toed safety shoes at all times:

- Plant operations.
- Maintenance.
- Garage activities.
- Delivery.

Protective Clothing

General clothing requirements Full length pants must be worn at all times with pant legs outside of boots. Long sleeved shirts must be worn during trailer/railcar loading and unloading. Clothing may contain 50% polyester as long as it is combined with 50% cotton. Rayon and nylon blends are not acceptable.

Note: Due to the close proximity of flammable material to the railcar loading station Nomex clothing must be worn during loading and unloading activities

Leather Welding Jacket

Leather welding jacket requirements Approved welding jackets may be purchased from the approved national contract vendor.

General requirements Leather welding jacket **must** be worn at all times when welding in tight and confined areas, and when performing overhead welding.

Chemical Sleeve Apron

Chemical sleeve aprons Approved chemical sleeve aprons may be purchased from the approved national contract vendor.

Task requirements Chemical sleeve aprons **must** be worn during the following operations:

- When mixing chemical solutions.
- Changing or switching chemical pumps.
- Changing out chemical drums.

Nomex Clothing

Nomex Coat	Nomex clothing must be purchased from an authorized Nomex Distributor.
Task requirements	<p>A Nomex suit must be worn when locally racking high voltage breakers (over 1,000 volts). A face shield (switchers hood with hat) and HV gloves must also be worn.</p> <p>Nomex IIIA clothing must be worn when delivering, filling, providing maintenance for, or processing flammable gases or liquids such as hydrogen. In addition Nomex IIIA clothing must be worn while loading or unloading railcars.</p>

Respiratory Protection

General Respirator Requirements	<p>Only personnel trained in the operation/use of each respirator, medically qualified, and qualitatively fit tested for each respirator is authorized to use that particular respirator. Site personnel who are Authorized and Qualified to use SCBA and other Respirators.</p> <p>For additional information on respiratory protection, see IMS-27-10 : Respiratory Protection Program.</p>
Health precautions	<p>Failure to properly select and use the appropriate respirator for all materials and concentrations to which the respirator wearer may be exposed could result in serious illness, disability or death.</p> <p>Immediately leave the area and contact management if:</p> <ul style="list-style-type: none">• Breathing becomes difficult.• Dizziness or other distress occurs.• You sense irritation, smell or taste contaminants.• The respirator becomes damaged.

General precautions

- Identify procedure for use, maintenance, monitoring of breathing air cylinders, etc.
- After every use of any reusable respirator or SCBA, management **must** be notified in order to have the units cleaned, recharged (if applicable) and made ready for use.
- Reusable respirators and SCBAs **must** be cleaned according to manufacturer's guidelines.
- Only qualified personnel can perform respirator maintenance. If there is a problem with any respirator, notify management immediately.
- Read all of the instructions that come with the respirator before using.
- Do not use against vapors or gases that lack adequate warning properties such as odor or irritating action.
- Only use the gas/vapor filters if they are in their original plastic bag. Otherwise, change the filter before use. Check to see if cartridge or canister is within expiration date, if applicable.
- Ensure the correct filter cartridge is used for the required protection. Use when working with any hazardous chemical, solvent, etc., that exceeds its PEL or TLV, whichever is lower.
- Do not use disposal, cartridge or canister type respirators in an area where the oxygen content is less than 19.5%, in an area of unknown contaminant concentration, or where the atmosphere is immediately dangerous to life or health.
- The integrity of an approved system **must** be preserved. Components from different manufacturers **must not** be used as substitutes in a respiratory protective system. For example: the cartridge of one manufacturer in the respirator of another manufacturer; the hose of one manufacturer with respirator of another manufacturer (gas mask or supplied air respirator or SCBA).

Respirators for dust and mist

- At all times during the following tasks:
- Working with insulation, Desiccant, silica gel
 - Molecular sieve handling
 - Sanding.

Respirators for dust, mist, fume, gas and vapor (Ammonia)

- At all times, during the following tasks:
- Working with ammonia and/or performing maintenance on the ammonia system
 - Replacing adsorber (sorbead)
 - Insulation work

Use the following respirators for dust/mist/fume/gas/vapor (Ammonia):

- MSA Model 401
- MSA Model Ultra-Lites
- Survivair 8A-41264: Multi-contaminant Ammonia Chlorine, Sulfur Dioxide, etc.
- MSA 1200 series: Acid Gas, Organic Vapors
- Willson 8A-18810: Acid Gas, Organic Vapors, Formaldehyde.

Approved cartridges and filters

The following cartridges with their limitations are the only approved cartridges for use:

- MSA 401 & Ultra-Lites Ammonia Cartridge #803670-01
- Survivair 8A-41264: Multi-contaminant Ammonia Chlorine, Sulfur Dioxide, etc.
- MSA 1200 series: Acid Gas, Organic Vapors
- Willson 8A-18810: Acid Gas, Organic Vapors, Formaldehyde.

Note: With a perfect fit test, the above cartridges will remove 10 times the PEL limit for the associated contaminant.

Respirator cleaning procedure

The cleaning procedure is as follows:

- Remove any filters, cartridges, headbands, and disassemble the major respirator parts.
- Wash all respirator parts (except cartridges and elastic headbands) in a cleaner-disinfectant solution at about 120°F. Use a soft brush to remove dirt.
- Rinse completely in clean, warm water and air dry in a clean area.
- Inspect all parts; replace with new parts, if defective.
- Reassemble the respirator and insert new filters or cartridges. Make sure the seal is tight.
- Place the respirator in a new plastic bag and seal it for storage.

Fall Arrest and Restraints

Inspection, maintenance and use

For complete information about the inspection, maintenance and use of body harnesses, lifelines seat belts and restraints, see [IMS-27-12 : Fall Arrest Protection](#).

Body Harnesses and Lifelines

General requirements



Safety full body harnesses and lifelines are required when working on elevated work areas greater than 6 feet (1.8 meters) above a lower level where no guard rail exists, including ladder work. Exceptions to this are permanently attached platforms, scaffolds, scissors lifts, etc., where guardrails and toeboards exist.

Note: A hazardous work permit (HWP) **must** be issued for elevated work. The exception being where routine tasks are performed and correct PPE requirements are specified.

Body harnesses, lanyards and connectors **must** be rated for 5,000 pounds (2250 kilograms), and according to Linde minimum standards. For specifications, see [Personal Fall Arrest Systems \(in IMS-26-19\)](#).

Seat Belts and Restraints

- General requirements** All Linde employees, as well as non-Linde employees, are required to use their seat belts when driving/riding in a company-owned or leased vehicle. Specifically:
- Sleeper safety nets and restraints **must** be used whenever the sleeper berth is occupied.
 - Vehicle seat and shoulder belts **must** be worn at all times when driving company vehicles and when driving on company business. All passengers **must** also wear seat belts.

Forms and Attachments

- Attachments** The following attachments are available in this chapter:
- *PPE Quick Reference Chart (see attachment)*