



General Product Safety Guidelines

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Introduction

Graco Inc. designs and manufactures products that move, measure, dispense and spray a variety of materials in a wide-range of applications. This guide explains the most common safety hazards encountered when using Graco equipment, the consequences of those hazards, and actions to take to avoid those hazards.

The safety hazards covered in this guide are not an exhaustive list. Users must refer to each specific Graco product manual(s) for complete warnings and instructions regarding the specific hazards associated with each Graco product. Graco product manuals are the primary guide to the safe set-up, installation, operation, maintenance and repair of Graco equipment. Retain the product manual for reference. Additionally, this guide does not cover the safety hazards for the vast array of materials used with Graco products. Users must refer to the material manufacturer's Safety Data Sheet (SDS) for the specific hazards associated with the material being used, and follow the material manufacturer's safety precautions.

Safety Symbols

Safety symbols are found throughout this guide, in Graco product manuals, and on product warning






labels. The safety alert symbol identifies important safety messages and indicates a personal safety hazard. The safety alert symbol is typically combined with a warning banner as shown below.



Safety messages identify hazards and provide information to avoid situations that can result in serious injury, death or property damage. Please take safety messages seriously.

There are three types of safety shapes that are used internationally.








	WARNING/HAZARD – Indicates a hazard.
	PROHIBITION - Indicates actions that should be avoided or stopped.
	MANDATORY ACTION - Indicates actions to take to avoid hazards.

Safety Symbols Defined

The safety symbols in the following tables are examples of commonly used safety symbols in Graco product manuals and on product warning labels.

NOTE: Not all safety symbols are included in this document. Your specific product manual and/or product warning labels may include other safety symbols.






Hazard Symbols

 Burn or Hot Surface	 Moving Parts – Pinch
 Electric Shock	 Skin Injection – Hose
 Skin Injection – Manual Gun	 Fire and Explosion
 Toxic Fluid or Fumes	

Prohibition Symbols

 Do not use Flammable Materials	 Do not Stop or Deflect Leaks
 Do not Wipe with a Dry Cloth	 Do not Point Gun at any Part of Body
 Eliminate Ignition Sources	

Mandatory Action Symbols

 Ground Equipment	 Relieve Pressure
 Read Manual	 Ventilate Area
 Wear Protective Equipment	

Universal Safety Precautions

Misuse of Graco products can cause death or serious injury. Some universal safety precautions for all Graco products include:

- Do not operate the unit when fatigued or under the influence of drugs or alcohol.
- Do not exceed the maximum working pressure or temperature rating of the lowest rated system component. See **Technical Data** in all equipment manuals.
- Use fluids and solvents that are compatible with equipment wetted parts. See **Technical Data** in all equipment manuals. Read fluid and solvent manufacturer's warnings. For complete information about your material, request Safety Data Sheet (SDS) from distributor or retailer.
- Do not leave the work area while equipment is energized or under pressure.
- Turn off all equipment and follow the **Pressure Relief Procedure** when equipment is not in use.
- Check equipment daily. Repair or replace worn or damaged parts immediately with genuine manufacturer's replacement parts only.
- Do not alter or modify equipment. Alterations or modifications may void agency approvals and create safety hazards.
- Make sure all equipment is rated and approved for the environment in which you are using it.
- Use equipment only for its intended purpose. Call your distributor for information.
- Route hoses and cables away from traffic areas, sharp edges, moving parts, and hot surfaces.
- Do not kink or over bend hoses or use hoses to pull equipment.
- Keep children and animals away from work area.
- Comply with all applicable safety regulations.

Personal Protective Equipment



Once the user is familiar with the Graco equipment and the material being used, the user must wear appropriate personal protective equipment when in the work area. Protective equipment helps prevent serious injury, including inhalation of toxic fumes, mists or vapors; allergic reaction; burns; eye injury and hearing loss. Personal protective equipment includes but is not limited to:

- Protective eyewear and hearing protection.
- A properly fitting respirator (which may include a supplied-air respirator), gloves (which may include chemically impermeable gloves), and protective clothing as recommended by the fluid and solvent manufacturer.

Hazards that may be Encountered Using Graco Products

The following hazards may be encountered while using Graco products. Your specific product manual and/or product warning labels may include other hazard warnings.

Fire and Explosion Hazard



Fire and explosion can only occur if there is an ignition source combined with flammable fumes, such as solvent, gasoline and paint fumes, in the work area. Examples of ignition sources that can potentially lead to a fire or explosion are: electrical switches or motors, open flames and static electricity. Static electricity may build up when fluids flow through pumps, hoses and spray tips or may build up if there are non-conductive plastic parts on the Graco equipment. When static electricity builds up, static discharge or sparking from an ungrounded object can occur. To help prevent fire and explosion:

- Use equipment only in well-ventilated area.
- Eliminate all ignition sources; such as pilot lights, cigarettes, portable electric lamps, and plastic drop cloths (potential static sparking).
- Ground all equipment in the work area. See **Grounding** instructions in the applicable Graco product manual.
- Never spray or flush solvent at high pressure.
- Keep work area free of debris, including solvent, rags and gasoline.
- Do not plug or unplug power cords, or turn power or light switches on or off when flammable fumes are present.
- Use only grounded hoses.
- All parts of the spray system, including the pump, hose assembly, spray gun and objects in and around the spray area shall be properly grounded to protect against static discharge or sparks.
- Hold gun firmly to side of grounded pail when triggering into pail. Do not use pail liners unless they are anti-static or conductive.
- **Stop operation immediately** if static sparking occurs or you feel a shock. Do not use equipment until you identify and correct the problem.
- Clean plastic parts only in well-ventilated area. Do not clean with a dry cloth.
- Keep a working fire extinguisher in the work area.

Electric Shock Hazard



Equipment must be grounded. Improper grounding, setup, or usage of the system can cause electric shock. Contact with high voltage equipment (greater than 240 volts), will cause death or serious injury. To reduce the risk of electric shock:

Hard Wired Equipment, Including High Voltage Equipment

- Turn off and disconnect power at main switch before disconnecting any cables and before servicing or installing equipment.
- Connect only to grounded power source.
- All electrical wiring must be done by a qualified electrician and comply with all local codes and regulations.

Power Cord Equipment

- Turn off and disconnect power cord before servicing equipment.
- Connect only to grounded electrical outlets.
- Use only 3-wire extension cords.
- Ensure ground prongs are intact on power and extension cords.
- Do not expose to rain. Store indoors.
- Wait five minutes after disconnecting power cord before servicing large capacitor units.

Skin Injection Hazard

(Generally Equipment with Pressure Rating of 1000 PSI or Greater)

The following safety symbols are commonly used in association with this hazard:



High-pressure fluid from gun, dispensing device, hose leaks, or ruptured components will pierce skin. This may look like just a cut, but it is a serious injury that can result in amputation. **Get immediate surgical treatment.**

- Do not spray without tip guard and trigger guard installed.
- Engage trigger lock when not spraying/dispensing.
- Do not point gun or dispensing device at anyone or at any part of the body.
- Do not put your hand over the fluid outlet (spray tip).
- Do not stop or deflect leaks with your hand, body, glove, or rag.
- Follow the **Pressure Relief Procedure** when you stop spraying/dispensing and before cleaning, checking, or servicing equipment.
- Tighten all fluid connections before operating the equipment.
- Check hoses and couplings daily. Replace worn or damaged parts immediately.

Important medical information on skin injection injury is provided on the Graco Medical Alert Wallet Card (Graco part no. 222-385). Carry this wallet card with you whenever operating high pressure equipment. If injection injury should occur, get immediate surgical treatment and show the doctor this wallet card.

Toxic Fluid or Fumes Hazard



Toxic fluids or fumes can cause serious injury or death if splashed in the eyes or on skin, inhaled, or swallowed.

- Read Safety Data Sheet (SDS) to know the specific hazards of the fluids you are using.
- Store hazardous fluid in approved containers, and dispose of it according to applicable guidelines.
- Route exhaust away from work area (diaphragm pump). If diaphragm ruptures, fluid may be exhausted into the air.
- Exhaust from equipment powered by gasoline engines contains poisonous carbon monoxide, which is colorless and odorless. Breathing carbon monoxide can cause death. Do not operate equipment in an enclosed area.

Moving Parts/Entanglement Hazard



Moving parts can pinch, cut or amputate fingers and other body parts. Rotating parts can cause serious injury.

- Keep clear of moving parts.
- Do not operate equipment with protective guards or covers removed.
- Pressurized equipment can start without warning. Before checking, moving, or servicing equipment, follow the **Pressure Relief Procedure** and disconnect all power sources.
- Do not wear loose clothing, jewelry or long hair while operating equipment.

Burn Hazard



Equipment surfaces and fluid that is heated can become very hot during operation. To avoid severe burns:

- Do not touch hot fluid or equipment.

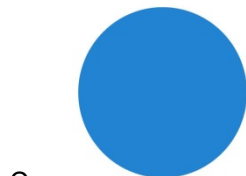
Resources

Graco product manuals are available at www.graco.com. Additionally, all product safety labels are available at no cost upon request.

Knowledge Check

Instructions: Answer the following questions and then compare your answers with those provided in the answer key. If you answered any questions incorrectly, review the corresponding section in this document.

1. Which of the following safety shapes indicates a hazard?



2. To reduce the risk of electric shock, what should you always do before disconnecting any cables, servicing, or installing equipment?

- A. Turn off equipment
- B. Disconnect power cord or power at main switch
- C. Turn off equipment and disconnect power cord or power at main switch
- D. Check equipment for worn or damaged parts.

3. Where should you look for a complete list of warnings and specific safety instructions for each Graco product?

- A. Equipment safety label
- B. Safety Data Sheet (SDS)
- C. General Product Safety Guidelines
- D. Product manual

4. Which hazard is indicated by these symbols?



- A. Burn hazard
- B. Skin injection hazard
- C. Electric shock hazard

5. What should you refer to for the specific hazards associated with the material being used?

- A. Equipment safety label
- B. Safety Data Sheet (SDS)
- C. General Product Safety Guidelines
- D. Product manual

6. As an equipment user, when should you wear the appropriate personal protective equipment (PPE)?

- A. Only when operating the equipment
- B. Only when servicing the equipment
- C. Only when handling materials
- D. Whenever you are in the work area

7. What steps should you take to reduce the risk of a skin injection hazard? Select all that apply.

- A. Do not spray without tip guard and trigger guard installed.
- B. Keep clear of moving parts.
- C. Do not wear loose clothing, jewelry or long hair while operating equipment.
- D. Engage trigger lock when not spraying/dispensing.
- E. Do not point gun or dispensing device at anyone or at any part of the body.
- F. Do not put your hand over the fluid outlet (spray tip).
- G. Do not stop or deflect leaks with your hand, body, glove, or rag.

8. To avoid misusing your Graco equipment, you should never exceed the maximum working pressure or temperature rating of the lowest rated system component. Where do you find the maximum working pressure and temperature ratings for Graco equipment?

- A. Equipment safety label
- B. Warnings section in equipment manual
- C. Technical Data/Technical Specifications section in equipment manual
- D. Parts section in equipment manual

9. Which steps should you take to help prevent fire and explosion? (This is not an exhaustive list.)
Select all that apply.
- A. Use equipment in well-ventilated areas.
 - B. Eliminate all possible ignition sources.
 - C. Engage trigger lock when not spraying/dispensing.
 - D. Keep clear of all moving parts on equipment.
 - E. Ground all equipment in the work area.
10. When static electricity builds up, static discharge or sparking from an ungrounded object can occur. This sparking can lead to a fire and/or explosion. To protect against static charges or sparks, which of the following steps should you take at a minimum? Select all that apply.
- A. Ground all equipment in the work or spray area
 - B. Ground all objects in and around work or spray area
 - C. Route hoses and cables away from traffic areas, sharp edges, moving parts, and hot surfaces
 - D. Use only grounded hoses
 - E. Do not exceed maximum working pressure
 - F. Never spray or flush solvent at high pressure
11. High-pressure fluid from the gun, dispensing device, hose leaks, or ruptured components will pierce skin. This may look like just a cut, but it is a serious injury that can result in amputation. If you receive an injection injury, what should you do? Select the BEST choice.
- A. Wait until the next day to go to the doctor
 - B. Research injection injury on the internet
 - C. Contact your doctor or the nurse line for medical advice
 - D. Get immediate surgical treatment and show the doctor the Graco Medical Alert Wallet Card
12. To avoid death or serious injury, what is the first thing you should do when equipment is not in use?
- A. Turn off all equipment and follow the Pressure Relief Procedure in the equipment manual
 - B. Check equipment for worn or damaged parts
 - C. Perform any necessary maintenance or repair procedures in the equipment manual

Answer Key – Knowledge Check

1. **Answer – A.** This safety shape indicates a hazard:



2. **Answer – C.** To reduce the risk of electric shock, before disconnecting any cables, servicing, or installing equipment always:

- Turn off equipment and disconnect power cord or power at main switch

3. **Answer – D.** For a complete list of warnings and specific safety instructions for each Graco product look in the:

- Product manual

4. **Answer – B.** These symbols  indicate a:

- Skin injection hazard

5. **Answer – B.** For the specific hazards associated with the material being used refer to the:

- Safety Data Sheet (SDS)

6. **Answer – D.** As an equipment user, you should wear the appropriate personal protective equipment (PPE):

- Whenever you are in the work area

7. **Answer – A, D, E, F, G.** To reduce the risk of a skin injection hazard, take these steps:
- Do not spray without tip guard and trigger guard installed.
 - Engage trigger lock when not spraying/dispensing.
 - Do not point gun or dispensing device at anyone or at any part of the body.
 - Do not put your hand over the fluid outlet (spray tip).
 - Do not stop or deflect leaks with your hand, body, glove, or rag.
8. **Answer – C.** Find the maximum working pressure and temperature ratings for Graco equipment in the:
- Technical Data/Technical Specifications section in equipment manual
9. **Answer – A, B, E.** To help prevent fire and explosion take these steps:
- Use equipment in well-ventilated areas.
 - Eliminate all possible ignition sources.
 - Ground all equipment in the work area.
10. **Answer – A, B, D, F.** To protect against static charges or sparks, take the following steps at a minimum:
- Ground all equipment the in work or spray area
 - Ground all objects in and around work or spray area
 - Use only grounded hoses
 - Never spray or flush solvent at high pressure
11. **Answer – D.** If you receive an injection injury, do this:
- Get immediate surgical treatment and show the doctor the Graco Medical Alert Wallet Card
12. **Answer – A.** To avoid death or serious injury, this is the first thing you should do when equipment is not in use:
- Turn off all equipment and follow the Pressure Relief Procedure in the equipment manual