America's Products

Safety Standard

Hand Safety & Injury Prevention

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1.0 Purpose, Objectives and Scope

1.1 Purpose

This standard provides guidance to protect your hands. This standard will show proper selection and use of gloves for the protection of hands during work performed at Chevron Facilities. Hand hazards must be anticipated and identified by conducting a thorough Hazard Analysis that includes using some or all of the following strategies:

- Following Chevron Tenets of Operation and Key Principles
- Pre-Planning Hazard Assessment & JLA
- Preventing Serious Injuries and Fatalities Field Guide
- On-site Hazard Assessment/Job Safety Analysis
- Loss Prevention Self Assessments (LPSA)
- Site & Equipment inspections
- Stop Work Authority
- Appropriate hazard mitigation plans

1.2 Objectives

This standard has been established to ensure employees and contractors eliminate or mitigate as many hazards as possible. Employees and Contractors shall wear the appropriate hand safety personal protective equipment to protect their hands while performing work. Examples include but are not limited to:

- Making general inspection rounds
- Gauging a tank
- Performing sample analysis
- Operating valves
- Cleaning dispensers
- Emptying trash
- Performing mechanical activities
- Performing any activity that your LPSA indicates the use of proper hand protection is necesary

1.3 Scope

This standard applies to all Chevron employees and contractors working at Chevron AP Facilities.

2.0 Terms and Definitions

Job Hazard Analysis (JLA) – A JHA is a written process used to identify safety concerns and minimize hazards at the job site. This can be a JHA, JLA, JSA.

Disposable Glove – Disposable Gloves offer limited protection for incidental contacts. Change immediately when contaminated product contacts gloves (offer very little protection- get a new pair often). Ensure the intended design is appropriate for the task.

Impact Glove – Impact Resistant Gloves, offer back of the hand protection, knuckle and finger reinforcements.

Chemical Resistance – Ability of material to resist damage by chemical reactivity or solvent action.

Chevron Approved Cut Resistance – ANSI cut resistant gloves at Level 3 or higher.

3.0 Assessing Hand Safety Hazards

3.1 Pre-task Assessment

Performing a task with the proper PPE is necessary. For tasks of routine nature, always consider a glove that provide a ANSI Level III (or higher) Cut Resistance. When assessing hand safety hazards as part of a pre-task risk assessment or during work activities, consider the following:

- Impact hazard to hands
- Chemicals present in the area in which you are working
- Temperature of equipment you are working with/around
- Ambient temperature
- Body positioning
- Wet or Dry Conditions
- Dexterity needed to perform your work safely
- Grip needed to perform your work safely
- Cut resistance level of the glove
- Potential pinch points
- Tools you will be working with
- Repetitive use and strain
- Avoid vibration, over use and over exertion
- Automated equipment (LOTO)
- Machine Guards
- Rotating and moving surfaces and machinery
- Jewelry and loose clothing
- Distractions and other work in the vicinity

Use the Preventing Serious Injury and Fatalities Field Guide as a tool for assessing the work.

3.2 Glove Selection

Table 1. Glove Selection

Task	Hazard	Glove / Safeguard

Task	Hazard	Glove / Safeguard
General purpose (non-chemical) work such as valve operation, climbing ladders, etc. Working on Marine Terminals Working around sharp edges, tools, knives	Scrapes, scratches and light / moderate burns Wet slippery surfaces / pinch points 	Leather palm, leather driving, dipped nylon, or gloves with equal or improved protection. Always look for a cut resistance factor of III or higher when selecting a glove in this category.
Incidental chemical exposure potential such as lab work, etc.	Incidental contact to chemical and hydrocarbon exposure potential/ skin contact 	Disposable Vinyl, Latex, Nitrile or PVC Disposable Gloves offer limited protection for incidental contacts. Change immediately when contaminated product contacts gloves (offer very little protection- get a new pair often).
When there is potential for elevated chemical exposure such as draining, cleaning, leaking of chemical and/or process equipment, tank sampling, tank reel gauging activities	Moderate to high chemical and hydrocarbon exposure potential (use proper arm and body protection) 	Industrial grade, chemical resistant gloves rated by the manufacturer sufficient for the chemical and time of the exposure. Materials used can be Neoprene, Nitrile, Butyl and PVC materials. Remember gloves are chemical resistant and shall be changed when exposed.
Welding, cutting and brazing	Thermal/Heat 	Welding Grade Gloves for the type of welding

Task	Hazard	Glove / Safeguard
High voltage electrical work (racking in/out, testing etc.)	Electrocution/Burns 	Voltage rated gloves with seamless protectors as outlined in Electrical Safe Work Practice ESH 550. When selecting a glove, ensure it is rated for the voltage it will be exposed to.
Hammering, rigging, scaffolding, pipefitting and task with potential impact hazards	Pinch, Smash, Crush, Fracture etc. 	Impact Resistant Gloves (back of the hand protection, knuckle and finger reinforcements)
Boiler shop, Working around material of high temperature.	Thermal Burn 	Gloves of Materials tested and approved for temps exceeding work temp

4.0 Ergonomics and Risk Factors for Repetitive Strain Injuries

4.1 RSI General Information

Repetitive Strain Injury symptoms tend to develop gradually. Initially, the symptoms may only occur infrequently or while performing repetitive tasks and resolve with rest. In time, the symptoms can be present all the time but tend to be made worse by doing the repetitive task. Symptoms can range from mild to severe. If the RSI symptoms are ignored, these may become long-term and possibly irreversible.

Symptoms indicate the need for rest and recovery of the affected body part(s).

Some common early symptoms:

- Tingling, burning,
- Stiffness

- Muscle fatigue
- Soreness
- Increasing level or frequency of discomfort

More severe symptoms include:

- Mild swelling
- Muscle weakness
- Loss of range of motion
- Guarding or protecting the affected body part(s)

4.2 Awkward or Static Posture

- Twisting
- Bending the wrist forward, backward or side to side
- When muscles stay contracted for too long, blood flow is reduced. The longer or more often a static or awkward body position is maintained, the more likely it will result in discomfort or injury.

4.3 Repetition

Repetitive movements are especially hazardous when they involve the same joints and muscle groups or the same motions., This type of work is very tiring because there is insufficient time for the involved body parts to fully recover in the short periods of time between movements. Eventually, it takes more effort to perform the same repetitive movements.

As a general rule, jobs or tasks are considered repetitive when:

- A task has a cycle time of less than 30 seconds. For example, packing a box of jars every 20 seconds
- A task requires repeating the activity more than 50% of the day. For example, a computer operator who enters data continuously for more than 50% of the day.

4.4 Force

Force is the amount of effort required to lift, push or pull objects, to use tools, or to complete a task. All work requires some force. If the force required to perform the work overloads the muscles, joints, tendons and other soft tissues, it is considered to be excessive force.

Excessive forces can be created by:

- The weight of the object and how it is handled – any amount of weight can create excessive force if it is difficult or awkward to grasp or handle.
- Awkward or improper hand grips.

Using a pinch grip requires more force than in a hook grip.

- High contact forces: High amounts of force applied over a small area creating pressure points. Red marks, bruising or indentations in the skin are signs of excessive contact force. They can be caused by the wrist coming into contact or resting on hard or sharp edges of a desk when using the keyboard or mouse or carrying a heavy bag over one shoulder.

4.5 Vibration

Hand/Arm Vibration can affect those who operate power driven hand tools such as jack hammers, air guns and chain saws.

Vibration is a problem because more force than normally needed may be required to control a vibrating hand tool or grip a vibrating steering wheel.

5.0 Roles, Responsibilities and Training Requirements

5.1 Employee and Contractor

Conduct a hazard assessment as part of work planning to identify potential hazards including, material handling and/or working with tools to determine the appropriate type and level of hand protection for the task.

- Remove or mitigate as many hazards as feasible.
- Complete a JHA/JLA for all work.
- Follow all PPE matrix' or standards requirements
- Use proper gloves by task as referenced on the charts
- Always utilize the Preventing Serious Injury and Fatalities Field Guide

6.0 General Safety Information

6.1 How Chemicals Get In

- Permeation – Diffusion of a chemical through a material on a molecular basis
- Penetration – Chemical enters through zippers, punctures, or seams
- Degradation – Chemical causes a change in the physical properties of the material

6.2 Glove Care

- Gloves are chemical resistant, not chemical proof. Change gloves whenever contact with hazardous chemicals occurs. Always wipe gloves clean of contaminants after use.
- Discard gloves if they become saturated with oil
- Inspect gloves before use for tears, excessive wear, and punctures
- Store in a clean, dry location
- Leak test chemical gloves by sealing the wrist and filling the glove with air
  - Use a clean plastic tube or low pressure airline – not your mouth!
  - Use caution while removing contaminated gloves

6.3 Hand Care

- Avoid washing your hands with solvents, harsh soaps, or abrasives
- Clean and bandage all cuts and abrasions
- Immediately remove any imbedded foreign materials and seek medical attention
- Wash immediately after using any chemical – Even if you did not detect leakage

- Pay attention to skin rashes—get an immediate medical evaluation if necessary
- Wear cotton gloves under rubber gloves to reduce sweating

7.0 References

Following is a complete list of the documents referenced by this standard:

Table 2. Document List

Title
Chevron Downstream & Chemical MFG 125
United States Department of Labor 29 CFR 1910.138
Cal OSHA Title 8 Section 3384
Preventing Serious Injury and Fatalities Field Guide

8.0 Other Guidance Documents

Table 3. Document List

Title	File / Link Name

9.0 Revision History

Table 4. Revision History

Description	Global Downstream

Table 5. Amendment Details

Amendment Date	Detail

Amendment Date	Detail