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Chronic Toxicity – Adverse (chronic) effects resulting from repeated doses of or exposure to a substance over a relatively prolonged period of time. Ordinarily used to denote effects in experimental animals.

Combustible – A term used by the National Fire Protection Association (NFPA), the U.S. Department of Transportation (DOT), and others to classify certain liquids that will burn, on the basis of flash points. Both NFPA and DOT generally define “Combustible liquids” as having a flash point of 100°F (37.8°C) or higher but below 200°F (93.3°C). Also see “flammable.” Non-liquid substances such as wood and paper are classified as “ordinary combustibles” by NFPA.

Combustible Liquid – Any liquid having a flash point at or above 100°F (37.8°C), but below 200°F (93.3°C), except any mixture having components with flash points of 200°F (93.3°C) or higher, the total volume of which makes up ninety-nine (99) percent or more of the total volume of the mixture.

Common Name – Any means used to identify a chemical other than its chemical name (e.g., code name, code number, trade name, brand name, or generic name). See Generic.

Concentration – The relative amount of a substance when combined or mixed with other substances. Examples: 2ppm hydrogen sulfide in air, or a 50 percent caustic solution.

Container – Any bag, barrel, bottle, box, can, cylinder, drum, reaction vessel, storage tank, or the like that contains a hazardous chemical. For purposes of SDS or HCS, pipes or piping systems are not considered to be containers.

Corrosive – A chemical that causes visible destruction of, or irreversible alterations in, living tissue by chemical action at the site of contact. For example, a chemical is considered to be corrosive if, when tested on the intact skin of albino rabbits by the method described by the DOT in Appendix A to 49 CFR Part 173, it destroys or changes irreversibly the structure of the tissue at the site of contact following an exposure period of 4 hours. This term shall not refer to action on inanimate surfaces.

Epidemiology – Science concerned with the study of disease in a general population. Determination of the incidence (rate of occurrence) and distribution of a particular disease (as by age, sex, or occupation) which may provide information about the cause of the disease.

Evaporation Rate – The rate at which a material will vaporize (evaporate) when compared to the known rate of vaporization of a standard material. This evaporation rate can be useful in evaluating the health and fire hazards of a material. The

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designated standard material is usually normal butyl acetate (NBUAC or n-BuAc), with a vaporization rate designated as 1.0. Vaporization rates of other solvents or materials are then classified as:

- FAST evaporating if greater than 3.0. Examples: Methyl Ethyl Ketone = 3.8,

- Tableau Closed Tester (see American National Standard Method of Test for Flash Point by Tag Closed Tester, Z11.24 1979 [ASTM D56-79]).
- Pensky-Martens Closed Tester (see American National Standard Method of Test for Flash Point by Pensky-Martens Closed Tester, Z11.7-1979 [ASTM D93-79]).
- Setaflash Closed Tester (see American National Standard Method of Test for Flash Point by Setaflash Closed Tester [ASTM D3278-78]).

Generic Name – A designation or identification used to identify a chemical by other than its chemical name (e.g., code name, code number, trade name, and brand name).

Hazard Statement: a statement assigned to a hazard class and category that describes the nature of the hazard(s) of a chemical, including, where appropriate, the degree of hazard.

Hazardous Chemical – Any chemical whose presence or use is a physical hazard or a health hazard.

Hazardous Warning – Words, pictures, symbols, or combination thereof presented on a label or other appropriate form to inform of the presence of various materials.

Health Hazard – A chemical for which there is significant evidence, based on at least one study conducted in accordance with established scientific principles that acute or chronic health effects may occur in exposed employees. The term “health hazard” includes chemicals that are carcinogens,

toxic or highly toxic agents, reproductive toxins, irritants, corrosives, sensitizers, hepatotoxins, nephrotoxins, neurotoxins, agents that act on the hematopoietic systems, and agents that damage the lungs, skin, eyes or mucous membranes.

Highly Toxic – A chemical in any of the following categories:

- A chemical with a median lethal dose (LD50) of 50 milligrams or less per kilogram of body weight when administered orally to albino rats weighing between 200 and 300 grams each.
- A chemical with a median lethal dose (LD50) of 200 milligrams or less per kilogram of body weight when administered by continuous contact for 24 hours (or less if death occurs within 24 hours) with the bare skin of albino rabbits weighing between 2 and 3 kilograms each.
- A chemical that has a median lethal concentration (LC50) in air of 200 parts per million by volume or less of gas or vapor or 2 milligrams per liter or less of mist, fume, or dust, when administered by continuous inhalation for 1 hour (or less if death occurs within 1 hour) to albino rats weighing between 200 and 300 grams each.

- Tableau Closed Tester (see American National Standard Method of Test for Flash Point by Tag Closed Tester, Z11.24 1979 [ASTM D56-79]).
- Pensky-Martens Closed Tester (see American National Standard Method of Test for Flash Point by Pensky-Martens Closed Tester, Z11.7-1979 [ASTM D93-79]).
- Setaflash Closed Tester (see American National Standard Method of Test for Flash

IDLH – Immediately Dangerous to Life or Health.

Inhibitor – A chemical added to another substance to prevent an unwanted chemical change.

Irritant – A chemical, which is not corrosive, that causes a reversible inflammatory effect on living tissue by chemical action at the site of contact. A chemical is a skin irritant if, when tested on the intact skin of albino rabbits by the methods of 16 CFR 1500.41 for 4 hours exposure or by other appropriate techniques, it results in an empirical score of 5 or more. A chemical is an eye irritant if so determined under the procedure listed in 16 CFR 1500.42 or other appropriate techniques.

Label – Notice attached to a container, bearing information concerning its contents.

LC – Lethal concentration is the concentration of a substance being tested that will kill.

LCL – Lethal concentration, low, lowest concentration of gas or vapor capable of killing a specified species over a specified time.

LC50 – The concentration of a material in air that will kill 50 percent of a group of test animals with a single exposure (usually 1 to 4 hours). The LC50 is expressed as parts of material per million parts of air, by volume (ppm) for gases and vapors, or as micrograms or material per liter of air (g/l) or milligrams of material per cubic meter of air (m/m³) for dusts and mists, as well as for gases and vapors.

LD – Lethal dose is the quantity of a substance being tested that will kill.

LDL – Lethal dose low, lowest administered dose of a material capable of killing a specified test species.

LD50 – A single dose of a material expected to kill 50 percent of a group of test animals. The LD50 dose is usually expressed as milligrams or grams of material per kilogram of animal body weight (mg/kg or g/kg). The material may be administered by mouth or applied to the skin.










LEL, or LFL – Lower explosive limit, or lower flammable unit, of a vapor or gas; the lowest concentration (lowest percentage of the substance in air) that will produce a flash of fire when an ignition source (heat, arc, or flame) is present. At concentrations lower than the LEL, the mixture is too “lean” to burn. Also see “UEL”.





Mist – Suspended liquid droplets generated by condensation from the gaseous to the liquid state, or by breaking up a liquid into a dispersed state such as splashing, foaming or atomizing. Mist is formed when a finely divided liquid is suspended in air.

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Mixture – Any combination of two or more chemicals if the combination is not, in whole or part, the result of a chemical reaction.

SDS – Material Safety Data Sheet (s). (To be known as **Safety Data Sheets**)

GHS Pictograms and Hazard Classes		
		
<ul style="list-style-type: none"> • Oxidizers 	<ul style="list-style-type: none"> • Flammables • Self Reactives • Pyrophorics • Self-Heating • Emits Flammable Gas • Organic Peroxides 	<ul style="list-style-type: none"> ▪ Explosives ▪ Self Reactives ▪ Organic Peroxides
		
<ul style="list-style-type: none"> ▪ Acute toxicity (severe) 	<ul style="list-style-type: none"> ▪ Corrosives 	<ul style="list-style-type: none"> ▪ Gases Under Pressure
		
<ul style="list-style-type: none"> ▪ Carcinogen ▪ Respiratory Sensitizer ▪ Reproductive Toxicity ▪ Target Organ Toxicity ▪ Mutagenicity ▪ Aspiration Toxicity 	<ul style="list-style-type: none"> ▪ Environmental Toxicity 	<ul style="list-style-type: none"> ▪ Irritant ▪ Dermal Sensitizer ▪ Acute toxicity (harmful) ▪ Narcotic Effects ▪ Respiratory Tract ▪ Irritation

ACUTE ORAL TOXICITY - Annex 1				
	Category 1	Category 2	Category 3	Category 4
LD ₅₀	≤ 5 mg/kg	> 5 < 50 mg/kg	≥ 50 < 300 mg/kg	≥ 300 < 2000 mg/kg
Pictogram				
Signal word	Danger	Danger	Danger	Warning
Hazard statement	Fatal if swallowed	Fatal if swallowed	Toxic if swallowed	Harmful if swallowed

Transport "Pictograms"		
		

Reactivity – Chemical reaction with the release of energy. Undesirable effects – such as pressure build up, temperature increase, formation of noxious, toxic or corrosive byproducts – may occur because of the reactivity of a substance to heating, burning, direct contact with other materials, or other conditions in use or in storage.

Table 3.1 Explosives

Division	Characteristics
1.1	Mass explosion hazard
1.2	Projection hazard
1.3	Fire hazard or minor projection hazard
1.4	No significant hazard
1.5	Very insensitive substances with mass explosion hazard
1.6	Extremely insensitive articles with no mass explosion hazard

Table 3.3 Flammable Liquids

Category	Criteria
1	Flash point < 23°C (73.4°F) and initial boiling point = 35°C (95°F)
2	Flash point < 23°C (73.4°F) and initial boiling point > 35°C (95°F)
3	Flash point = 23°C(73.4°F) and = 60°C (140°F)
4	Flash point = 60°C (140°F) and = 93°C (200°F)

Table 3.4 Flammable Solids

Category	Criteria
1	Metal Powders: burning time = 5 minutes Others: wetted zone does not stop fire & burning time < 45 seconds or burning > 2.2 mm/second

2	Metal Powders: burning time > 5 and = 10 minutes Others: wetted zone stop fire for at least 4 minutes & burning time < 45 seconds or burning rate > 2.2mm/second
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format, and include the section numbers, the headings, and associated information under the headings below:

Section 1, Identification includes product identifier; manufacturer or distributor name, address, phone number; emergency phone number; recommended use; restrictions on use.

Section 2, Hazard(s) identification includes all hazards regarding the chemical; required label elements.

Section 3, Composition/information on ingredients includes information on chemical ingredients; trade secret claims.

Section 4, First-aid measures includes important symptoms/ effects, acute, delayed; required treatment.

Section 5, Fire-fighting measures lists suitable extinguishing techniques, equipment; chemical hazards from fire.

Section 6, Accidental release measures lists emergency procedures; protective equipment; proper methods of containment and cleanup.

Section 7, Handling and storage lists precautions for safe handling and storage, including incompatibilities.

Section 8, Exposure controls/personal protection lists OSHA's Permissible Exposure Limits (PELs); Threshold Limit Values (TLVs); appropriate engineering controls; personal protective equipment (PPE).

Section 9, Physical and chemical properties lists the chemical's characteristics.

Section 10, Stability and reactivity lists chemical stability and possibility of hazardous reactions.

Section 11, Toxicological information includes routes of exposure; related symptoms, acute and chronic effects; numerical measures of toxicity.

Section 12, Ecological information*

Section 13, Disposal considerations*

Section 14, Transport information*

Section 15, Regulatory information*

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Section 16, Other information, includes the date of preparation or last revision.

*Note: Since other Agencies regulate this information, OSHA will not be enforcing Sections 12 through 15(29 CFR 1910.1200(g)(2)).

TDL – Toxic dose low, lowest administered dose of a material capable of producing a defined toxic effect in a specified test species.

TLV – Threshold Limit Value is a term used by ACGIH to express the airborne concentration of material to which nearly all persons can be exposed day after day without adverse effects. ACHIH expressed TLBs in three ways:

- **TLV-TWA:** The allowable Time-Weight Average concentration for a normal 8-hour workday or 40-hour workweek.
- **TLV-STEL:** The Short-Term Exposure Limit, or maximum concentration for a continuous 15-minute exposure period (maximum of four such periods per day, with at least 60 minutes between exposure periods, and provided the daily TLV-TWA is not exceeded).
- **TLV-C:** The ceiling exposure limit – the concentration that should not be exceeded even instantaneously.

Toxic – A chemical falling within any of the following categories:

- A chemical that has a median lethal dose (LD50) of more than 50 milligrams per kilogram but not more than 500 milligrams per kilogram of body weight when administered orally to albino rats' weight between 200 and 300 grams each.
- A chemical that has a median lethal dose (LD50) of more than 200 milligrams per kilogram but not more than 1,000 milligrams per kilogram of body weight when administered by continuous contact for 24 hours (or less if death occurs within 24 hours) with the bare skin of albino rabbits weighing between two and three kilograms each.
- A chemical that has a median lethal concentration (LC50) in air of more than 200 parts per million but not more than 2,000 parts per million by volume of gas or vapor, or more than two milligrams per liter but not more than 20 milligrams per liter of mist, fume, or dust, when administered by continuous inhalation for one hour (or less if death occurs within 1 hour) to albino rats weighing between 200 and 300 grams.

Toxic Substance – Any substance that can cause acute or chronic injury to the human body, or which is suspected of being able to cause diseases or injury under some conditions.

Trade Name – The trademark name or commercial trade name for a material or product.

TWA – Time Weighted Average exposure is the airborne concentration of a material to which a person is exposed, averaged over the total exposure time – generally the total workday (8 to 12 hours). Also see TLV.

UEL, or UFL – Upper explosive limit or upper flammable limit of a vapor or gas; the highest concentration (highest percentage of the substance in air) that will produce a flash of fire when an ignition source (heat, arc, or flame) is present. At higher concentrations, the mixture is too “rich” to burn. Also see LEL.

STATE RIGHT-TO-KNOW

Many states and local communities have adopted employee “Right-To-Know” laws. Most of these local laws contain not only the provisions of Federal Standard, but often go far beyond in their compliance requirements. However, the courts have ruled that the Federal OSHA Standard pre-empts all state and community Right-To-Know laws for all employers with respect to those requirements that are covered by the federal standard.

This does not mean S.C. Swiderski, LLC and its Affiliates is exempt from all the requirements of state Right-To-Know laws. According to OSHA, employers need to comply with the labeling, SDS and training requirements. Others must still be met, such as annual reports, community notification of hazardous materials, employee right of refusal to work, additional hazardous material sources, etc. Each state and local community must be checked to determine their local requirements regarding hazardous materials.

EXEMPTIONS

There are two types of exemptions from this program, and they are as follows:

The following materials or operations are exempt from the provisions of this Standard:

- Any hazardous waste which is subject to the regulations of the Environmental Protection Agency (EPA);
- Toxic substances used in the workplace which are in the same form, volume, concentration, and for the same use as commonly sold by retail outlets as consumer goods.
- Any consumer product used in the workplace in the same manner as normal customer use, which will not result in a duration and frequency of exposure greater than consumer exposure.
- Tobacco or tobacco products.
- Foods, drugs, or cosmetics for personal consumption by employees in the workplace.

When labeled in accordance with federal requirements, the following substances shall be exempt only from the labeling provisions of the Standard.

- Pesticides subject to EPA's Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) labeling requirements.
- Food, drug, or cosmetic material subject to labeling requirements of the Food and Drug Administration (FDA).

- Distilled spirits, wine, or malt beverages subject to labeling requirements of the Treasury's Bureau of Alcohol, Tobacco and Firearms (BATF); and
- Consumer products subject to labeling requirements of the Consumer Products Safety Commission.

Hazard Assessment

S.C. Swiderski, LLC has chosen to rely on the evaluation and determination of the material by the material manufacturer and importer and the use of the Safety Data Sheets (SDS) they have provided, to satisfy the requirements of 29 CFR 1910.1200 (d) Hazard Determination.

S.C. Swiderski, LLC relies, in good faith, on the SDS received with all hazardous material shipments, or soon thereafter in the case of missing or updated MSDS, from the material manufacturer, importer or distributor. If new and significant information concerning the potential health hazard of a material in the workplace is uncovered, then the Safety Manager will ensure that either an updated SDS is obtained from the supplying source, or in the event such SDS is not available, that the new information is added to the appropriate section of the existing SDS within two (2) months of his being advised of the new information.

S.C. Swiderski, LLC will rely solely on the SDS and will not utilize any in-house alternatives to the SDS for hazard assessment.

Since S.C. Swiderski, LLC does not have access to the written procedures maintained by the material manufacturer or importer, should a problem arise with the information received which cannot be resolved with the supplier; the matter will be referred to the nearest OSHA office for investigation.

In the event S.C. Swiderski, LLC should become a "hazardous material manufacturer" due to a material being produced during a process of any type, and should S.C. Swiderski, LLC employees become either exposed or potentially exposed, the material will be evaluated in accordance with the provisions of the Standard by an appropriate outside chemical laboratory who will also be requested to provide a completed SDS on the basis of their analysis of the material.

Should S.C. Swiderski, LLC find it necessary to mix two or more materials, and the mixture has already been tested by any of the suppliers to determine its hazards, the results of this testing will be requested on an SDS for the mixture. If this mixture has not been tested as a whole, then paragraphs (5) (ii), (5) (iii), and (5) (iv) of the Standard will be used as the procedure for determination of the hazard. Should this become necessary, the procedures used to evaluate this mixture will be described in writing and attached to the completed SDS.

NOTE: *Ingredients of less than 1% of the mixture must be identified if there is evidence that the ingredients could be released from the mixture in concentrations that would exceed a maximum threshold limit or present a health hazard.*

HAZARDOUS MATERIAL INVENTORY

The Safety & Compliance Manager will conduct an inventory of all hazardous materials within the workplace. From the appropriate SDS on each of these materials, he/she will make a hazard assessment and take the necessary steps to ensure that the hazard

NOTE: One of the most important aspects of state Right-To-Know laws is documentation. Therefore, it is imperative that you carefully document all communications with both supplier and customers when dealing with hazardous materials and SDS.

TRADE SECRETS

Most state Right-To-Know laws, as well as the Federal Standard, provide protection for trade secrets in varying degrees. If trade secret information is withheld on the SDS, all other information must be provided on the substance's properties and effects. The SDS must also indicate the category of information being withheld and the claim of a trade secret must be able to be supported. The specific chemical identity that may be withheld includes the chemical name, CAS number, or any other information, which could reveal the precise chemical designation of the substance.

Should a treating physician or health care professional determine that a medical emergency exists; the manufacturer must immediately disclose any necessary trade secret information that will assist the medical professionals in handling the emergency.

Hazardous Materials Identification

Container Labeling (Hazardous Chemicals Only)

Each container of a hazardous chemical must have a warning label. The labeling system

which is tied to descriptive information on the SDS, communicates the chronic health hazard. An alphabetical designation is used to denote a single item, or a combination of terms, of personnel protective equipment appropriate for use when exposed to the hazardous chemical.

The HMIS label utilizes a four-color rectangle or square, which is affixed to the chemical container, conveyance, or piping system, etc.

Workplace Labels

LABELS USED ON CONTAINERS OF HAZARDOUS CHEMICALS WHICH DO NOT LEAVE THE WORKPLACE

The use of the standard HMIS labels, as identified below, may be used on all containers, which remain within the workplace. The standard label is described as follows:

White space	--Chemical name	0 = Little or no hazard
Blue space	--Health Hazard	1 = Slight hazard
Red space	--Flammability hazard	2 = Moderate hazard
Yellow space	--Reactivity hazard	3 = High hazard
White space	--Personal Protective Equipment	4 = Extreme hazard

The numbers 0 to 4 may appear in the blue, red, and yellow spaces.

Shipping Labels

LABELS USED ON CONTAINERS OF HAZARDOUS CHEMICALS WHICH ARE SHIPPED OUT OF THE WORKPLACE

In the case of shipped containers of hazardous chemicals, the label must also include the target organ effects of the hazardous chemical. In addition to the information contained in the standard HMIS label, the shipping HMIS label must also contain the following information:

- Health hazards
- Immediate and delayed target organ effects
- Routes of entry
- Physical hazards
- Name and address of chemical manufacturer, importer, or other responsible party.

Completing the Hazardous Material Information System (HMIS) Label

The Safety & Compliance Manager is responsible for ensuring that the proper hazard assessment and protective equipment ratings appear on all HMIS labels used for identifying hazardous chemicals in the workplace. Work area supervisors should assist

Supervisor Responsibilities

Supervisors are responsible for establishing safe procedures and for ensuring that the protective equipment needed to work with the chemicals is available. Supervisors must instruct their workers about possible hazards, safety precautions that must be observed, possible consequences of an accident, and procedures to follow if an accident does occur. The supervisor is required to enforce the proper use of protective equipment and established safety practices.

It is the responsibility of employees and all who use S.C. Swiderski, LLC facilities to understand the properties of the chemicals with which they will work and follow all precautions that apply to each specific task.

When faced with an unexpected threat of malfunction, injury, or damage, employees are expected to choose a course of action that provides the most protection to themselves and to others in the area. Every employee is expected to report to the supervisor any unsafe condition seen in the area that would not permit him/her to work safely.

The Safety & Compliance Manager assists employees and supervisors to work safely by providing information on the hazardous properties of materials, recommending methods for controlling the hazards of specific operations, and by monitoring the work environment. Supervisors must instruct their personnel about the potential hazards involved in the work, proper safety precautions to follow, and emergency procedures to use if an accident should occur.

To supplement the supervisor's training, the Safety & Compliance Manager will conduct training courses and materials on selected topics. In addition, material safety data sheets and safety information, including hazards, health effects, potential routes of exposure, proper handling precautions, and emergency procedures on specific chemicals, are available through the Safety & Compliance Manager's office.

Responsibilities of Supervisors/Management to Identify Hazards for Respective Work Areas

Ensure hazards are properly labeled. Obtain/maintain copies of material safety data sheets, as required, of each hazardous material used in the work area and make them accessible to employees during each work shift. Have the written Hazard Communication Program available to all employees. Provide hazard-specific training for employees. Identify hazardous materials in the hazard review section of the S.C. Swiderski, LLC purchase requisition form. Employees must: Attend safety training meetings. Perform operations in a safe manner. Notify management immediately of any safety hazards or

injuries. When ordering materials, identify hazardous chemicals in the hazard review section of the S.C. Swiderski, LLC purchase requisition form.

The Safety & Compliance Manager must:

Orientation and Training

S.C. Swiderski, LLC has established an initial orientation and on-the-job training program for each employee who may encounter, or be exposed to, a hazardous material in the workplace.

We believe that color coded warning labels, SDS, Hazardous Chemical Inventories, and a specific orientation and training program, all play an equally important part in the Hazard Communication Program.

Each employee, who is affected by the OSHA Hazard Communication Standard, must be informed of the provisions of the Standard. This will include an explanation of the requirements of the Standard, the S.C. Swiderski, LLC written Hazard Communication Program, how to use the Safety Data Sheet online portal, the Hazardous Material Inventory, and the color-coded label system. Training will be provided at the time of initial assignment and whenever a new hazardous material is introduced into the work area. Employees will be informed of operations in the work area where hazardous materials are present, an where they can find the company's written Hazard Communication Program, the Hazardous Material Inventory, the hazard determination procedure, and the SDS.

Initial Orientation and Training

New or transferred employees must be assumed to have little or no prior knowledge of the extent of hazards associated with hazardous materials. Prior to initiation of work, the supervisor must give the new employee a thorough description of the work area, use and maintenance of personnel protective devices, and a complete description of the initial work assignment.

The format of the hazard communication portion of the initial orientation and training includes supervisor's classroom instruction on the employees' right-to-know, how to use an SDS, the company's Hazard Communication Program, the OSHA Standard, and the Hazardous Material Inventory.

On-The-Job Training

For those employees who will be working directly with a hazardous material, the functional supervisor in the area in which the work will take place will be responsible for specific on-the-job training regard to these materials. The supervisor will instruct these employees on the methods and observations that may be used to detect the presence or release of the hazardous chemical, including air sampling, personal monitoring, visual appearance, odor, etc., the physical and health hazard of the chemical, and the specific measures the employee can take to protect himself from these hazards.

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During this on-the-job training and working directly with the hazardous material, it should be planned to have the new employee work closely with a more experienced co-worker until such time as it is determined the new employee can work independently.

Non-Routine Tasks

Materials Handling

Introduction

S.C. Swiderski, LLC requires that safety planning and practices for commonplace tasks be as thorough as for operations with unusual hazards. Commonplace tasks make up the greater part of the daily activities of most employees and, not unexpectedly, offer more potential sources of accidents with injuries and property damage. Every operation or work assignment begins and ends with the handling of materials. Whether the material is a sheet of paper (paper cuts are painful) or a cylinder of toxic gas, accident risks can be reduced with thorough planning. Identifying obvious and hidden hazards should be the first step in planning work methods and job practices.

Thorough planning should include all the steps associated with good management from job conception through crew and equipment decommissioning. Most of the material presented in this chapter is related to the commonplace and obvious. Nevertheless, *a majority of the incidents leading to injury, occupational illness, and property damage stem from a failure to observe the principles associated with safe materials handling and storage.* A less obvious hazard is the potential failure of used or excessive motorized handling or lifting equipment. The Safety & Compliance Officer must be notified whenever it is desired to acquire a crane, forklift, truck, or other motorized handling or lifting equipment from outside sources.

Handling Materials

In the handling of materials, employees must know the following:

- There must be safe clearance for equipment through aisles and doorways.
- Aisle ways must be designated, permanently marked, and kept clear to allow unhindered passage.
- Motorized vehicles and mechanized equipment will be inspected daily or prior to use.
- Vehicles must be shut off and brakes must be set prior to loading or unloading.
- Containers of combustibles or flammables, when stacked while being moved, must be separated by dunnage sufficient to provide stability.
- If dock boards (bridge plates) are used when loading or unloading operations are taking place between vehicles and docks, precautions must be observed.
- Trucks and trailers will be secured from movement during loading and unloading operations.
- Dock plates and loading ramps will be constructed and maintained with sufficient strength to support imposed loading.

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