

PROCESS SAFETY INFORMATION

Revision History

Rev. #	Description of Change	Date	Revised By
0	Initial Issue	July 2016	PSM RMP Solutions

Purpose

The purpose of compiling written process safety information is to enable the employees involved in the handling of hazardous chemicals to identify and understand the chemicals and the hazards posed by the system. Employers must compile written process safety information before conducting any process hazard analysis required by the PSM and CalARP regulations.

Contents

This document is comprised the following information:

1) Hazards of the Chemical Used in the Process

- Toxicity information;
- Permissible exposure limits;
- Physical data;
- Corrosivity data;
- Thermal and chemical stability data;
- Reactivity data; and
- Hazardous effects of incompatible mixtures which could foreseeably occur.

The Safety Data Sheet for each regulated chemical is used for defining the chemical hazards, including the above elements.

2) Process Technology Information

- Block flow diagram – Not Applicable
- Process chemistry – Not Applicable
- Maximum intended inventory
- Safe upper and lower limits for process variables – Not Applicable
- Consequences of deviations – Not Applicable

Note: For original information that is unavailable or no longer exists, the information was developed through the Process Hazard Analysis study.

3) Process Equipment Information

- Materials of construction
- Piping & instrumentation diagrams – Not Applicable
- Electrical classification – Not Applicable
- Relief system design and design basis
- Ventilation system design – Not Applicable
- Design codes employed including design conditions and operating limits
- Material and energy balances for processes built after September 1, 1992 – Not Applicable
- Safety systems (such as interlocks, detection and suppression systems, etc.)
- Electrical supply and distribution systems – Not Applicable

In addition, Inland Star Distribution Centers, Inc. has documented that the equipment complies with recognized and generally accepted good engineering practices.

The PSI documentation for the storage of hazardous chemicals can be found in the following attachments.

Responsibilities

The General Manager, Operations is responsible for ensuring that this Process Safety Information document is current and accurate. If a major change to the chemical inventory occurs that makes the information inaccurate, the General Manager, Operations shall ensure that this document is updated as required by the Management of Change section of this PSM/CalARP Program.

Accessibility

The PSI documentation is maintained in the General Office. The information is accessible to all employees who perform any duties on or near the chemical storage areas.

Attachment A: Chemical Hazards

Safety Data Sheet

- Methyltrichlorosilane
- Peracetic Acid
- Epichlorohydrin
- Cyclohexylamine

Attachment B: Process Technology Information

Maximum Intended Inventory

Chemical	Largest Container	Total On-Site	Location
Methyltrichlorosilane	1,000 lbs	4,000 lbs	Area B
Peracetic Acid	485 lbs	5,000 lbs	Area C
Epichlorohydrin	507 lbs	19,000 lbs	Area B
Cyclohexylamine	386 lbs	14,000 lbs	Area B

Attachment C: Process Equipment Information

Materials of Construction

Chemical	Storage Container	Total On-Site	Location
Methyltrichlorosilane	Tank	4,000 lbs	Area B
Peracetic Acid	Drum, Pail, Tote	5,000 lbs	Area C
Epichlorohydrin	Drum	19,000 lbs	Area B
Cyclohexylamine	Drum	14,000 lbs	Area B

Specifications of the Methyltrichlorosilane tanks:

Tank Specs:

DOT Specification : DOT Spec 51 Portable tank

Material: Carbon Steel Heads: SA516-70 Shell: SA516-70

Design Code: ASME Code section VIII, Division 1

Design Temps: Minimum -40 C Maximum 204 C

Head and Shell thickness: 6.35 mm

MAWP: 240 psi

Capacity: 120.8 USG

Openings: Top (3) openings /(1) -2 inch for relief (2) – ¾ inch for liquid and vapor valves /No bottom openings

Dip Pipe: Yes, top center for liquid opening.

Relief System Design and Design Basis

The Methyltrichlorosilane is stored in a tank with the following specifications on relief valve:

Relief Valve:

Size: 2 inch

Manufacturer: BPS

Set Pressure 240 psig

Max Flow: 3469 CFM air

Elastomers/O-ring Material: Viton

Spring Material: Inconel

Rupture/Frangible Disk: None

Design Codes, Standards, and Good Engineering Practices

Warehouse Racking

- 2012 IBC Section 2209
- 2013 CBC Section 2209A

- ANSI MH 16.1-2012 Specifications for the Design of Industrial Steel Storage Racks “2012 RMI Rack Design Manual”
- ASCE 7-10, section 15.5.3

Fire Suppression System

- NFPA 10, *Standard for Portable Fire Extinguishers*
- NFPA 13, *Standard for the Installation of Sprinkler Systems*
- NFPA 16, *Standard for the Installation of Foam-Water Sprinkler and Foam-Water Spray Systems*
- NFPA 20, *Standard for Stationary Pumps for Fire Protection*
- NFPA 25, *Standard for the Inspection, Testing, and Maintenance of Water-Based Fire Protection Systems*
- NFPA 30, *Flammable and Combustible Liquids Code*
- NFPA 30B, *Standard for the Manufacturing and Storage of Aerosol Products*
- NFPA 70, *National Electrical Code*®
- NFPA 72, *National Fire Alarm and Signaling Code*®
- NFPA 400, *Hazardous Material Code*

Facility

- 2013 Editions of the California Building Code and California Fire Code

Safety Systems

Fire Prevention Strategy

Each permitted fire suppression system installed in the Carson facility was carefully engineered to protect a wide range of product and storage configurations. Four (4) distinct suppression systems (described in the chart below) establish a Highly Protected risk (HPR) occupancy for the site.

Area & Suppression Summary

Area	Occupancy	Storage Classification	Fire Suppression System
A A - Cooler	S-1	Non Regulated, Combustibles (Flash Points above 200 degrees F), Class 1 Oxidizers & Aerosols (L-1, L-2 & L-3) & Class I through Class IV Commodities, cartoned Group A nonexpanded plastics per NFPA 13	Pendent K=17 ESFR* Sprinkler design @ 52-PSI
B B- Cooler B-Freezer	H-3	Flammables	AFFF** .45/3,000 with In-Rack Sprinklers; Pendent K=11.2
C	H-3	Class 2 Oxidizers	AFFF** .45/3,000; Pendent K=11.2

Area	Occupancy	Storage Classification	Fire Suppression System
D	H-4	Corrosives & Poisons	Upright K=17 ESFR* Sprinkler design @ 42-PSI

*ESFR = Early Suppression Fast Response

**AFFF = Aqueous Film Forming Foam

The Carson suppression system is supported by a back-up diesel Fire Pump. The pump is supported from street pressure of 133 PSI and puts out at 63 PSI with no static discharge. At 64 PSI it puts out 1250 gallons per minute. At maximum capacity it can put out 3750 GPM. The only sprinkler heads that would open would be those that are heated enough to melt the solder. This fire system is state of the art, and we configured suppression infrastructures based on the nature of the product requiring extinguishing. There are ten (10) easily accessible fire hydrants on site.