

Safety & Health Quick List

Chemical/ Product Name:	Ethylene Oxide	CAS No:	75-21-8
Synonym:	EO		

Hazards Statements:
 Extremely flammable gas.
 Contains gas under pressure; may explode if heated.
 Toxic if inhaled.
 Causes serious eye irritation.
 Causes skin irritation.
 May cause genetic defects.
 May cause cancer.
 May cause respiratory irritation.

NFPA Ratings:	4-Dangerous	3-Severe	2-Moderate	1-Slightly Hazardous
GHS Ratings:	1-Dangerous	2-Severe	3-Moderate	4-Slightly Hazardous

Physical Properties:

NFPA Rating: Health	3	Auto Ignition Temp.	804 F
NFPA Rating: Flammability	4	Solubility in Water	Completely Miscible
NFPA Rating: Reactivity	3	Specific Gravity	0.882
GHS Classification: Flammability	1	Flash Point	-20 F
GHS Classifications: Health Hazard	1	Vapor Pressure	20.97 psi
Fire Extinguisher Type	Water	Max Concentration	100%
Freeze Point	-170 F	Boiling Point	51.8 F
LEL%	2.60%	RQ	10 lbs
UEL%	99.99%		
Vapor Density	1.49		

Exposure Guidelines

PEL/TLV	1 ppm	Corrosive	N/A
STEL	5 ppm	Irritant	2
Ceiling	N/A	IDLH	800 ppm
Skin Notation (S)	2	Odor Threshold	300 ppm
Carcinogen (A1-A4)	1B	Sensitizer	N/A

Emergency Response

Initial Isolation and Protective Action Distances						
Name of Material	Small Spills			Large Spills		
	Isolate in all directions	Protect Downwind		Isolate in all directions	Protect Downwind	
		Day	Night		Day	Night
Ethylene Oxide	100 ft	0.1 mi	0.1 mi	See Tables Below		
Ethylene oxide with Nitrogen						

Container Type	Rail tank car				
First Isolate in all Directions	600 ft				
Then Protect Downwind					
Day			Night		
Low (<6 mph)	Moderate (6-12 mph)	High (>12 mph)	Low (<6 mph)	Moderate (6-12 mph)	High (>12 mph)
1.0 mi	0.5mi	0.5 mi	2.1 mi	0.9 mi	0.5 mi
Monitoring Method	N/A				

ERPG-2	50 ppm
ERPG-3	500 ppm

Normal Tasks

Sampling
 Drum/Tote Filling (w/ resided EO)
 Strapping Tank/Truck
 Hose Disconnect Unclear (Camlock Fitting)
 Hose Disconnect Unclear (Dry Disconnect)
 Line/Equipment Opening Unclear
 Line/Equipment Opening Clear
 Contaminated Equipment in Maintenance Shop which can't be cleaned
 Tank Cleaning (No Chemicals Present)
 Tank Cleaning (Chemicals Present)

PPE Group

Group 9
Group 9
Group 9
Group 9
Group 9
Group 9
Group 9
Group 9
Group 9
Group 9

Emergency Response Tasks

Small Spill
 Medium Spill
 Large Spill
 Downwing Monitoring (Vapor Only)
 Liquid Contact (HAZMAT)

PPE Group

Group 9
Group 9
Group 9
Group 9
Group 9

Lab Handling

Inside Hood
 Outside Hood

PPE Group

Group 13
Group 13

NUMBER	KEY CODE	DESCRIPTION
GROUP 2	GENERAL PROCESS AREA	Standard PPE - Hard Hat, Nomex Coveralls, Safety Side-Shield Glasses, Work Gloves (Leather)
GROUP 9	TYCHEM SUIT	Standard PPE (Group 2) with Chemical Gloves, Boots, Tyochem Suit, and the Required Respirator
GROUP 11	STANDARD LAB -L	Nomex Lab Coat, Safety Side-Shield Glasses, Latex Gloves
GROUP 12	STANDARD LAB -N	Nomex Lab Coat, Safety Side-Shield Glasses, Nitrile Gloves
GROUP 13	LAB & RESPIRATOR	Group 11 or 12 along with a Cartridge Respirator
Respirator Type	Breathing Air, Full Face	
Chemical Glove Type	Butyl Rubber	

PPE Example



