

OSHA Occupational Chemical Database / PHOSGENE (CARBONYL CHLORIDE)

# PHOSGENE (CARBONYL CHLORIDE)†

Chemical Identification	
CAS #	75-44-5
Formula	CCl <sub>2</sub> O
Synonyms	carbon oxychloride; carbonyl chloride; carbonyl dichloride; chloroformyl chloride

Physical Properties			
Physical description	Colorless gas with a suffocating odor like musty hay.		
Boiling point	47°F	Molecular weight	98.9
Freezing point/melting point	-180°F	Vapor pressure	1.6 atm
Flash point		Vapor density	3.48
Specific gravity	1.43 (liquid at 32°F)	Ionization potential	11.55 eV
Lower explosive limit (LEL)		Upper explosive limit (UEL)	
NFPA health rating	4	NFPA fire rating	0
NFPA reactivity rating	1	NFPA special instruction	
Vapor hazard ratio (VHR)			
Historical exceedance percentage			
Target organs			

Monitoring Methods Used by OSHA			
Analyte code (IMIS no.)	2070		
Sampling group			
Sampler/Sampling media	XAD-2 tube (150/75 mg) coated with 10% 2-(hydroxymethyl)piperidine [SKC 226-117]		
Sampling time*	240 min		
Sampling volume (TWA)*	240 L		
Sampling flow rate (TWA)*	1 L/min		
Sampling volume (STEL/Peak/C)*	15 L		
Sampling flow rate (STEL/Peak/C)*	1 L/min		
Analytical method instruments	GC-NPD		
Method reference	OSHA 61 (fully validated)		

Monitoring Methods Used by OSHA			
<b>Notes</b>	When relative humidity at sampling site is low, reduce maximum sample size to 120 Liters and sampling rate to 0.5 L/min.		
<b>Special requirements</b>			

\* All sampling instructions above are recommended guidelines for OSHA Compliance Safety and Health Officers (CSHOs), please see the corresponding OSHA method reference for complete details.

Wipe Method	
<b>Sampler/Sampling media</b>	

Bulk Method	

On-Site Screening Techniques			
<b>Device</b>	Detector tube	Detector tube	Detector tube
<b>Model/Type</b>	Dräger - Phosgene 0.02/a, 8101521	Dräger - Phosgene 0.25/a, CH19401	Dräger - Phosger CH28301
<b>Sampling information (see manufacturer instructions)</b>	20 or 40 strokes, approx 0.01-1 ppm range, uncertainty 16%	1-33 strokes, approx 0.04-1.5 ppm, uncertainty 32%	5 strokes, approx ppm range, uncer 25%

Exposure Limits							
OSHA PEL 8-hour TWA (ST) STEL (C) Ceiling Peak		NIOSH REL Up to 10-hour TWA (ST) STEL (C) Ceiling		ACGIH TLV® 8-hour TWA (ST) STEL (C) Ceiling		CAL/OSHA PEL 8-hour TWA (ST) STEL (C) Ceiling Peak	
<b>PEL-TWA</b>	0.1 ppm (0.4 mg/m³)	<b>REL-TWA</b>	0.1 ppm (0.4 mg/m³)	<b>TLV-TWA</b>	0.1 ppm [1992]	<b>PEL-TWA</b>	0.1 ppm (0.4 mg/m³)
<b>PEL-STEL</b>		<b>REL-STEL</b>		<b>TLV-STEL</b>		<b>PEL-STEL</b>	
<b>PEL-C</b>		<b>REL-C</b>	0.2 ppm (0.8 mg/m³) [15 minutes]	<b>TLV-C</b>		<b>PEL-C</b>	
<b>Skin notation</b>	N	<b>Skin notation</b>	N	<b>Skin notation</b>	N	<b>Skin notation</b>	N
<b>Notes:</b> See 29 CFR 1910.1000 Table Z-1.		<b>Notes:</b>		<b>Notes:</b>		<b>Notes:</b>	
<b>Health factors:</b> See NIH-NLM PubChem.		<b>IDLH</b>	2 ppm				
<b>Carcinogenic classifications:</b> EPA-II		<b>Notes:</b>					

**Exposure Limits****AIHA emergency response planning guidelines - ERPG-1/ERPG-2/ERPG-3:**

--/0.5 ppm/1.5 ppm

**Additional Resources and Literature References****NOAA: CAMEO Chemicals** - Phosgene**NIOSH: Pocket Guide to Chemical Hazards** - Phosgene**Literature References**

- **ACGIH: *Documentation of the Threshold Limit Values (TLVs) and Biological Exposure Indices (BEIs)*** - Phosgene. See annual publication for most recent information.

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## UNITED STATES DEPARTMENT OF LABOR

Occupational Safety & Health Administration  
200 Constitution Ave NW  
Washington, DC 20210  
☎ 800-321-6742 (OSHA)  
TTY  
www.OSHA.gov

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