

Occupational Safety and Health Administration

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TRIMETHYLAMINE

Label abbreviations descriptions

Chemical Identification

CAS #	75-50-3
Formula	C ₃ H ₉ N
Synonyms	N,N-dimethylmethanamine; TMA [Note: May be used in an aqueous solution (typically 25%, 30%, or 40% TMA.)]

Physical Properties

Physical description	Colorless gas with a fishy, amine odor.		
Boiling point	37.2°F	Molecular weight	59.11
Freezing point/melting point	-179°F	Vapor pressure	1454 mmHg at 70°F
Flash point		Vapor density	2.09
Specific gravity	0.633 at 68°F	Ionization potential	
Lower explosive limit (LEL)	2.0%	Upper explosive limit (UEL)	11.6%
NFPA health rating	3	NFPA fire rating	4
NFPA reactivity rating	0	NFPA special instruction	
Vapor hazard ratio (VHR)			
Historical exceedance percentage			
Target organs			

Monitoring Methods Used by OSHA

Analyte code (IMIS no.)	T127
Sampling group	
Sampler/Sampling media	XAD-7 tube (80/40 mg) coated with phosphoric acid [SKC 226-98]
Sampling time*	100 min
Sampling volume (TWA)*	10 L
Sampling flow rate (TWA)*	0.1 L/min
Sampling volume (STEL/Peak/C)*	
Sampling flow rate (STEL/Peak/C)*	

Analytical method instruments	GC-FID
Method reference	OSHA PV2060 (partially validated)
Notes	
Special requirements	

* 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.

Bulk/Wipe Method

Wipe Sampler/Sampling media	
Bulk Method	

On-Site Screening Techniques

Device	
Model/Type	
Sampling information (see manufacturer instructions)	

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	
PEL-TWA		REL-TWA	10 ppm (24 mg/m³)	TLV-TWA	5 ppm [2012]	PEL-TWA	5 ppm (12 mg/m³)
PEL-STEL		REL-STEL	15 ppm (36 mg/m³)	TLV-STEL	15 ppm [2012]	PEL-STEL	15 ppm (36 mg/m³)
PEL-C		REL-C		TLV-C		PEL-C	
Skin notation	NA	Skin notation	N	Skin notation	N	Skin notation	N
Notes: Not established		Notes:		Notes:		Notes:	
Health factors: See NIH-NLM PubChem .		IDLH					
Carcinogenic classifications: Not listed		Notes:					
AIHA emergency response planning guidelines - ERPG-1/ERPG-2/ERPG-3: 0.1/100 ppm/500 ppm							

Additional Resources and Literature References

NOAA: CAMEO Chemicals - [Trimethylamine, anhydrous](#)

NIOSH: Pocket Guide to Chemical Hazards - [Trimethylamine](#)

Literature References

- NOAA: CAMEO Chemicals - [Trimethylamine, aqueous solution](#).
- ACGIH: *Documentation of the Threshold Limit Values (TLVs) and Biological Exposure Indices (BEIs)* - Trimethylamine. See annual publication for most recent information.
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- Pohanish, R.P. (editor): Trimethylamine. *Sittig's Handbook of Toxic and Hazardous Chemicals and Carcinogens, Fourth Ed.*, Vol. 2. Norwich, NY: Noyes Publications, William Andrew Publishing, 2002, pp. 2275-2277.
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Last Updated Date : 07/13/2021

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