

8. Exposure controls/personal protection

Occupational exposure limits

The following constituents are the only constituents of the product which have a PEL, TLV or other recommended exposure limit. At this time, the other constituents have no known exposure limits.

US. OSHA Table Z-1 Permissible Exposure Limits (PEL) for Air Contaminants (29 CFR 1910.1000)

Components	Type	Value
PROPAN-2-OL (CAS 67-63-0)	PEL	980 mg/m3 400 ppm
PROPANE (CAS 74-98-6)	PEL	1800 mg/m3 1000 ppm

US. ACGIH Threshold Limit Values (TLV)

Components	Type	Value
BUTANE (CAS 106-97-8)	STEL	1000 ppm
PROPAN-2-OL (CAS 67-63-0)	STEL	400 ppm
	TWA	200 ppm

NIOSH. Immediately Dangerous to Life or Health (IDLH) Values, as amended

Components	Type	Value
BUTANE (CAS 106-97-8)	IDLH	1.6 % 2000 ppm 1600 ppm
PROPAN-2-OL (CAS 67-63-0)	IDLH	2 % 2000 ppm
PROPANE (CAS 74-98-6)	IDLH	2.1 % 2100 ppm

US. NIOSH: Pocket Guide to Chemical Hazards Recommended Exposure Limits (REL)

Components	Type	Value
BUTANE (CAS 106-97-8)	TWA	1900 mg/m3 800 ppm
PROPAN-2-OL (CAS 67-63-0)	STEL	1225 mg/m3
	TWA	500 ppm 980 mg/m3 400 ppm
PROPANE (CAS 74-98-6)	TWA	1800 mg/m3 1000 ppm

Biological limit values

ACGIH Biological Exposure Indices (BEI)

Components	Value	Determinant	Specimen	Sampling Time
PROPAN-2-OL (CAS 67-63-0)	40 mg/l	Acetone	Urine	*

* - For sampling details, please see the source document.

Appropriate engineering controls

Use adequate ventilation to control airborne concentrations below the exposure limits/guidelines. If user operations generate a vapor, dust and/or mist, use process enclosure, appropriate local exhaust ventilation, or other engineering controls to control airborne levels below the recommended exposure limits/guidelines.

Individual protection measures, such as personal protective equipment

Eye/face protection Wear safety glasses with side shields (or goggles).