

**Biological limit values****ACGIH Biological Exposure Indices (BEI)**

Components	Value	Determinant	Specimen	Sampling Time
2-BUTOXYETHANOL (CAS 111-76-2)	200 mg/g	Butoxyacetic acid (BAA), with hydrolysis	Creatinine in urine	*
ETHYLBENZENE (CAS 100-41-4)	0.15 g/g	Sum of mandelic acid and phenylglyoxylic acid	Creatinine in urine	*
PROPAN-2-OL (CAS 67-63-0)	40 mg/l	Acetone	Urine	*
TOLUENE (CAS 108-88-3)	0.3 mg/g	o-Cresol, with hydrolysis	Creatinine in urine	*
	0.03 mg/l	Toluene	Urine	*
	0.02 mg/l	Toluene	Blood	*
XYLENE (CAS 1330-20-7)	1.5 g/g	Methylhippuric acids	Creatinine in urine	*

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

**Exposure guidelines****US - California OELs: Skin designation**

2-BUTOXYETHANOL (CAS 111-76-2)	Can be absorbed through the skin.
Butan-1-ol (CAS 71-36-3)	Can be absorbed through the skin.
CUMENE (CAS 98-82-8)	Can be absorbed through the skin.
MORPHOLINE (CAS 110-91-8)	Can be absorbed through the skin.
TOLUENE (CAS 108-88-3)	Can be absorbed through the skin.

**US - Minnesota Haz Subs: Skin designation applies**

2-BUTOXYETHANOL (CAS 111-76-2)	Skin designation applies.
Butan-1-ol (CAS 71-36-3)	Skin designation applies.
CUMENE (CAS 98-82-8)	Skin designation applies.
MORPHOLINE (CAS 110-91-8)	Skin designation applies.
TOLUENE (CAS 108-88-3)	Skin designation applies.

**US - Tennessee OELs: Skin designation**

2-BUTOXYETHANOL (CAS 111-76-2)	Can be absorbed through the skin.
Butan-1-ol (CAS 71-36-3)	Can be absorbed through the skin.
CUMENE (CAS 98-82-8)	Can be absorbed through the skin.
MORPHOLINE (CAS 110-91-8)	Can be absorbed through the skin.

**US ACGIH Threshold Limit Values: Skin designation**

MORPHOLINE (CAS 110-91-8)	Danger of cutaneous absorption
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**US NIOSH Pocket Guide to Chemical Hazards: Skin designation**

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

2-BUTOXYETHANOL (CAS 111-76-2)	Can be absorbed through the skin.
CUMENE (CAS 98-82-8)	Can be absorbed through the skin.
MORPHOLINE (CAS 110-91-8)	Can be absorbed through the skin.

**Appropriate engineering controls**

Provide eyewash station and safety shower. 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**

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