

**Exposure Mitigation Health-Based Action Levels for Averaged Data**  
*for field use with instruments that provide real-time averaging of data while stationary*

*\*These values should not be directly compared to instantaneous data\**

Chemical(s)	<sup>EM</sup> HBAL <sub>10min</sub> (ppb)	<sup>EM</sup> HBAL <sub>1hr</sub> (ppb)
Acetylene	75,000	50,000
Ammonia	2,550	1,700
Benzene	500 <sup>b</sup>	360
1,3-Butadiene	2,500 <sup>b</sup>	3,400
Butane	276,000	184,000
1-Butene	81,000	54,000
C3-C4 Saturated	--	--
Chlorine	200 <sup>b</sup>	140
Cyclohexane	3,000	2,000
Ethylbenzene	60,000	40,000
Ethylene Dichloride	1,000 <sup>b</sup>	1,080
Ethylene Glycol	5,700	3,800
Ethylene Oxide	2,500 <sup>b</sup>	1,820
Formaldehyde	50	88
n-Hexane	16,200	10,800
Hydrochloric Acid	1,000 <sup>c</sup>	880

Chemical(s)	<sup>EM</sup> HBAL <sub>10min</sub> (ppb)	<sup>EM</sup> HBAL <sub>1hr</sub> (ppb)
Hydrogen Sulfide	210	140
Isobutane	99,000	66,000
n-Octane	12,300	8,200
Propane <sup>a</sup>	--	--
Propylene <sup>a</sup>	--	--
Sodium Hydroxide	15	10
Styrene	10,000 <sup>b</sup>	10,200
Sulfur Dioxide	--	--
Sulfuric Acid	90	60
Toluene	12,000	8,000
Vinyl Chloride	216,000	144,000
Xylenes + Ethylbenzene	15,000 <sup>d</sup>	10,000 <sup>d</sup>
Xylenes	15,000	10,000
Associated Actions	Consider exposure mitigation if 5-10 min avg > level	Consider exposure mitigation if 30+ min avg > level

<sup>a</sup> Simple asphyxiant, non-toxic in ambient air; <sup>b</sup> Based on ½ occupational short-term exposure level (STEL); <sup>c</sup> Based on ½ occupational ceiling value;

<sup>d</sup> Values are based on acute health-based comparison values (AHBCV) for xylenes; "--"no value available; ppb – parts per billion;

<sup>EM</sup>HBAL<sub>10min</sub> – 10-minute exposure mitigation health-based action level;

<sup>EM</sup>HBAL<sub>1hr</sub> – 1-hour exposure mitigation health-based action level

**Note: If a value does not exist and one is needed for screening, please contact the Toxicology Division for a trip-specific value at [TOX@tceq.texas.gov](mailto:TOX@tceq.texas.gov) or 512-239-1795.**

**Basis of exposure mitigation values and recommended actions if exceeded:**

Comparison Value (Acronym)	Basis	Recommended Actions
<b>10-min health-based action level for exposure mitigation</b> ( <sup>EM</sup> HBAL <sub>10min</sub> )	Lower of 3×AHBCV <sup>a</sup> , ½ STEL <sup>b</sup> , or ½ C <sup>c</sup>	Consider exposure mitigation for staff
<b>1-hour health-based action level for exposure mitigation</b> ( <sup>EM</sup> HBAL <sub>1hr</sub> )	2×AHBCV	Consider exposure mitigation for staff

*AHBCV – acute health-based comparison value; C – ceiling value; STEL – 15-minute short-term occupational exposure limit; the DUVAS caterpillar trail designated color for <sup>EM</sup>HBAL values is purple*