



## GENERAL INFORMATION ABOUT REGULATORY GUIDELINE FACT SHEETS

Fact Sheets provide a description of the air quality guideline values used by the Toxicology Section (TS) of the Texas Commission on Environmental Quality (TCEQ) to make sure the air is safe in Texas. For more detailed information about how the TS develops these values, please see the [ESL Guidelines](#) or contact the TS by phone (1-877-992-8370) or e-mail ([tox@tceq.state.tx.us](mailto:tox@tceq.state.tx.us)).

### **What is an Effects Screening Level (ESL)?**

Effects Screening Levels (ESLs) are chemical concentrations in the air that are safe. ESLs protect human health in the general public, including children, the elderly, pregnant women, and people with pre-existing health conditions. ESLs also protect against welfare effects, such as strong odors and harmful effects in plants. ESLs are used in the air permit application process to evaluate the protectiveness of emissions for specific chemicals. Short-term ESLs protect against short-term health effects from discontinuous exposure, nuisance odor, and harmful effects in plants. Long-term ESLs protect against long-term health effects and plant damage. For air permit applications, short-term ESLs are used to evaluate predicted 1-hour average air concentrations, and long-term ESLs are used to evaluate predicted 1-year average air concentrations. If the predicted maximum air concentrations are below short-term and long-term ESLs, then adverse health effects, nuisance odor, and harmful effects in plants would not be expected.

### **What is a Reference Value (ReV)?**

Like ESLs, Reference Values (ReVs) are safe concentrations of chemicals in the air. ReVs are used to evaluate chemical levels found in outdoor air samples collected by TCEQ around facilities that release chemicals into the air. ReVs are concentrations that humans, including children, the elderly, pregnant women, and people with pre-existing health conditions, can inhale for a given time period without significant risk of adverse effects. Acute ReVs are used to evaluate short-term air monitoring data, whereas chronic ReVs are used to evaluate long-term air monitoring data. Health-based ESLs, described previously, are set at 1/3 the ReV to protect against the combined effects of emissions from multiple facilities in an area.

### **What type of exposures do these values protect against?**

ESLs and ReVs are set to prevent adverse effects that might occur following inhalation exposure to chemicals in outdoor air. These values do not apply to exposures that may occur through skin contact or swallowing.

### **What duration of exposure is considered short-term?**

Short-term ESLs and acute ReVs are typically set to evaluate discontinuous 1-hour exposures.



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### **What duration of exposure is considered long-term?**

Long-term ESLs and chronic ReVs are set to evaluate lifetime exposures. These values are used to evaluate yearly average concentrations in air permit applications and air monitoring data.

### **How many chemicals does the TCEQ monitor?**

The TCEQ currently monitors for more than 130 chemicals in outdoor air using methods approved by the United States Environmental Protection Agency.