

Technical Bulletin – T0104:

**Fluid Samples Containing Hydrogen
Sulfide (H₂S)**

The following guidelines have been implemented concerning fluid samples requiring immersion testing.

1. Fluid samples that contain H₂S in excess of 5 ppm (parts per million) will not be tested at Willis and should not be sent into the Willis plant.
2. In the event that the H₂S level is not filled out or indicated as "traces" on the data sheet, the H₂S content must be verified to be below 5 ppm. The sample must be sent direct to an independent laboratory by the customer for determination of H₂S level. The customer should obtain an RGA number from RMES in the normal manner but will be advised to send the sample direct to the laboratory.
3. If the H₂S content level is less than 5 ppm, the sample will be forwarded to RMES for immersion testing. If the H₂S level is above 5 ppm, the sample will be disposed of.

For reference, see chart on effects of H₂S exposure:

Toxic effects of hydrogen sulfide exposure	
Concentration	Effect
1 PPM	Smell
100 PPM	Loss of smell
300 PPM	Loss of consciousness with time (~ 30 min.)
1000 PPM	Immediate respiratory arrest, loss of consciousness, followed by death
OSHA Permissible Exposure Limits: 10 ppm – 8 hr Time Weighted Average 15 ppm – 15min Short Term Exposure Limit	

Other Info: Direct any questions regarding this bulletin to:

R&M Energy Systems
Customer Service Department
1-888-355-5508 Ext. 252

Health effects from chronic low-level exposure to hydrogen sulfide.

Legator M S; Singleton C R; Morris D L; Philips D L

Archives of environmental health (United States) Mar-Apr 2001 , 56 (2) p123-31,

The acute toxic effects of hydrogen sulfide have been known for decades. However, studies investigating the adverse health effects from chronic, low-level exposure to this chemical are limited. In this study, the authors compared symptoms of adverse health effects, reported by residents of two communities exposed mainly to chronic, low-levels of industrial sources of hydrogen sulfide, to health effects reported by residents in three reference communities in which there were no known industrial sources of hydrogen sulfide. Trained interviewers used a specially created menu-driven computer questionnaire to conduct a multi-symptom health survey. The data-collection process and questions were essentially the same in the reference and exposed communities. The two exposed communities responded very similarly to questions about the major categories. When the authors compared responses of the exposed communities with those of the reference communities, 9 of the 12 symptom categories had iterated odds ratios greater than 3.0. The symptoms related to the central nervous system had the highest iterated odds ratio (i.e., 12.7; 95% confidence interval = (22.09, 7.59) followed by the respiratory category (odds ratio = 11.92; 95% confidence interval = 6.03, 25.72), and the blood category (odds ratio %95 ; 8.07 = confidence interval = 3.64, 21.18). Within the broader health categories, individual symptoms were also elevated significantly. This study, like all community-based studies, had several inherent limitations. Limitations, and the procedures the authors used to minimize their effects on the study outcomes, are discussed. The results of this study emphasize the need for further studies on the adverse health effects related to long-term, chronic exposure to hydrogen sulfide.