NAME: Aluminum (as Al), Welding Fumes
IMIS: A102
CAS: 7429-90-5
DESCRIPTION: Solid.

Exposure Limits

ACGIH TLV: 5 mg/m³ TWA
NIOSH REL: 5 mg/m³ TWA

Health Factors

HEALTH EFFECTS: Explosive, Flammable, Safety (No adverse effects encountered when Good Housekeeping Practices are followed) (HE18)

NIOSH/OSHA/DOE Health Guideline

Monitoring

PRIMARY SAMPLING/ANALYTICAL METHOD (SLC1):

MEDIA: Tared Low Ash Polyvinyl Chloride (LAPVC) filter 5 microns
MAX V: 960 Liters  MIN V: 480 Liters  MAX F: 2.0 L/min
ANL 1: Gravimetric
REF: 11, 12
CLASS: Fully Validated

MEDIA: Tared Low Ash Polyvinyl Chloride (LAPVC) filter 5 microns
MAX V: 960 Liters  MIN V: 480 Liters  MAX F: 2.0 L/min
ANL 1: Atomic Absorption Spectroscopy; AAS/Lithium Borate
REF: 2 (OSHA In-house file)
CLASS: Partially Validated
NOTE: Submit as a separate sample. When analysis of a compound is requested, an elemental analysis is performed and reported as the compound. The analytical method does not distinguished between dusts and fume. If the gross weight of the sample yields a concentration below the standard for the air contaminant, do not submit the sample to SLTC for analysis.

MEDIA: Mixed Cellulose Ester Filter (MCEF) 0.8 microns
MAX V: 960 Liters  MIN V: 480 Liters  MAX F: 2.0 L/min
ANL 1: Atomic Absorption Spectroscopy; AAS
REF: 2 (OSHA ID-121)
CLASS: Fully Validated
NOTE: Submit as a separate sample. Since this method cannot be used for samples collected on
LAPVC filters, the industrial hygienist is given the option of using either collection procedure for
alpha- Alumina (Aluminum Oxide) samples. LAPVC samples are only submitted to the laboratory if
the PEL is exceeded based on a gravimetric analysis. MCEF samples are submitted to the laboratory
without any weighing of filters in the field.