



UNITED STATES DEPARTMENT OF LABOR
OCCUPATIONAL SAFETY & HEALTH ADMINISTRATION

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Chemical Sampling Information
Aluminum (as Al), Welding Fumes

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General Description

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 distinguish 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.

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