

Identification of the substance: Aluminium oxide

Substance name	Aluminium oxide
EC	215-691-6
CAS	1344-28-1
IUPAC	Aluminium oxide
Molecular formula	Al ₂ O ₃
Forms in the market	Powder

Physical and chemical properties

Shape	Spherical
Size (nm)	40 (average)

Toxicological information

Inhalation acute toxicity	LC50 = 0.888 mg/L (Extremely toxic)
Dermal acute toxicity	No data
Oral acute toxicity	LD50 = >1000 mg/kg (Nontoxic)
Genotoxicity	Negative ^{In vitro} Positive ^{In vivo}
Cytotoxicity	Positive

Ecotoxicological information

Freshwater Acute toxicity (Daphnia)	EC50 = 310.53 mg/L (Nontoxic)
	LC50 = 53.29 mg/L (Practically nontoxic)
Freshwater Acute toxicity (Alga)	EC50 = 45.4 mg/L (Practically nontoxic)
	EC50 = 39.95 mg/L (Practically nontoxic)
Freshwater Acute toxicity (Fish)	No data
Soil invertebrates (worms)	No data
BAF-Bioaccumulation	No data

Application

Industrial uses	Coatings
	Plastic automotive
	Mechanical reinforcement
	Corrosion resistance
Improved properties	Chemical resistance
	Scratch resistance
	Scuffing resistance
	Marring damage
	Rub-off damage
	Light scratching
	Transparency

Polymeric matrix	Acrylates (urethane acrylate, polyester acrylate, epoxy acrylate, polyether acrylate, acrylic acrylate) and aliphatic polyesters polyurethanes
Recommendations, comments	Solvent-free and solvent-borne, radiation-curable coatings and aqueous coating systems Polymer systems used in automotive and film application
