

# Technical Datasheet

Product name: liquid aluminium alloys  
Version: 1.2 / en  
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## PRODUCT

Liquid aluminium alloys, molten aluminium. Delivered in special containers. Temperature of the metal: 700 to 950°C. Temperature on the surface of the containers: up to 130°C.

## USE OF THE PRODUCT

Casting and metal processing to aluminium semi-fabricated products and cast parts.

## SUPPLIER

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## COMPOSITION/INFORMATION ON INGREDIENTS

Substance	EC number	REACH Registration number	Concentration (%)
Copper	231-159-6	01-2119480154-42-xxxx	≤ 6
Zinc	231-175-3	01-2119467174-37-xxxx	≤ 16
Silicon	231-130-8	01-2119480401-47-xxxx	≤ 19.6
Iron	231-096-4	01-2119462838-24-xxxx	≤ 5.0
Titanium	231-142-3	01-2119484878-14-xxxx	≤ 0.25
Manganese	231-105-1	01-2119449803-34-xxxx	≤ 1.5
Magnesium	231-104-6	01-2119537203-49-xxxx	≤ 10
Lead	231-100-4	01-2119513221-59-xxxx	≤ 0.3
Tin	231-141-8	01-2119486474-28-xxxx	≤ 20
Chromium	231-157-5	01-2119485652-31-xxxx	≤ 0.6
other components			
single	-	-	≤ 0.05
total	-	-	≤ 0.5
Aluminium	231-072-3	01-2119529243-45-xxxx	residual

## PHYSICAL AND CHEMICAL PROPERTIES

Physical state: liquid  
Colour: silvery or silver grey, at higher temperatures red/orange  
Odour: odourless  
Density (20°C): 2.2 – 2.8 kg/dm<sup>3</sup> (depends on the chemical composition)  
Range of solidification: 510 -657°C (depends on the chemical composition)  
Boiling point: approx. 2500°C  
Thermal expansion coefficient: 22 – 24.1 x 10<sup>6</sup> 1/K (depends on temperature and alloying materials)  
Thermal conductivity: 70 – 232 W/m x K  
Combustion heat: 31 mJ/kg  
Solubility in water: almost insoluble  
Solubility in acids and alkalines: soluble with generation of hydrogen in strong acids and alkalines (except oxidising acids).  
Dangerous reactions: Danger of explosion when molten aluminium gets in contact with water (sudden violent release of steam; special risks from the substance, its combustion products or hot gases).

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## POSSIBLE HAZARDS FOR HUMAN AND ENVIRONMENT

**Liquid aluminium:** burn risk because of high temperature (up to 950°C).

Risk of explosion if in contact with water! Sudden violent release of steam.

**Recently casted aluminium:** metal parts are still hot, burn risk.

## ECOLOGY AND TOXICOLOGY

The substances themselves contained in the product do not pose any health hazard or ecological hazard under normal conditions of use.

Gases which are generated during melting or welding of massive aluminium alloys present only low health risks. Ozone, nitrogen oxides and ultra violet radiation can be generated during MIG-welding or plasma-oxygen-cutting of aluminium alloys.

Dust and fine particles can be generated during processing of massive aluminium alloys.

## HANDLING

For handling of **molten metal:** the use of protective clothing (flame retardant), gloves and safety glasses or face shields is required.

Recently **cast products** may still be very hot, but don't have a warning colour change. Avoid touching metal in casting areas! The movement of molten aluminium has to be carried out using suitable and approved refractory lined containers. Be careful to use only preheated or specially coated and rust free tools in contact with molten aluminium.

## ACCIDENTAL RELEASE MEASURES

Let molten metal solidify before further handling. Stop leaking liquid metal with sand or soil. Avoid dropping of liquid metal into water or canalization (risk of water vapour explosion).

## FIRST-AID MEASURES

In case of burns from hot metal carefully remove affected clothing, but avoid tearing off burned-in residues. Rinse affected parts of the body with plenty of water until pain relieves. In case of large-scaled burns cool carefully with not too cold water (risk of hypothermia and shock). Immediately consult a physician.

## FIRE FIGHTING MEASURES

Molten metal may react violently with water. Never use water or foam in case of burning! Suitable extinguishing agents are dry powder or sand.

## STORAGE

Avoid contact with water.

## TRANSPORTINFORMATION

**Transport classification:** land carriage with special trucks

**„UN 3257 ERWÄRMTER FLÜSSIGER STOFF; N.A.G. (geschmolzenes Aluminium)“, Klasse 9, Verpackungsgruppe III (D)**