

## PRODUCT DATA SHEET

# Gallium Metal



### Introduction

Indium Corporation is a leading global supplier of **pure gallium and gallium alloys** and chemicals. **Gallium metal** is extracted as a byproduct during the production process for aluminum and zinc. Rigorous quality standards and advanced analytical instrumentation, such as ICP and GDMS, assures consistent product quality from one lot to another.

### General Properties and Applications of Commercial-Grade Gallium

**Gallium** is used in many applications either as **pure gallium** or as a **gallium alloy**.

- **Gallium** is supplied in the form of alloyed sputtering targets to deposit thin-film layers in photovoltaic cells (such as CIGS)
- **Gallium** can be used in thermal evaporation equipment for thin-film deposition
- **Gallium** can be combined with indium, tin, and/or zinc to form alloys that are liquid at room temperature.
- **Gallium** is also useful because it wets to glass and ceramics.

Atomic Number	31
Boiling Point	2,204°C
Melting Point	29.8°C
Density	6.10g/cm <sup>3</sup>
Atomic Weight	69.7g/mol

### Available Physical Forms of Gallium

At room temperature, **gallium** is already very close to its melting point. Because of this, **gallium** is only offered in two forms:

- Round shot
- Formless metal

As round shot, **gallium** must be shipped cold in regulation-approved bottles to prevent heat exposure and melting during shipment.

**Gallium** is also supplied in combination with other elements as an alloy or chemical form.

### Grades Available

- 4N (99.99%)
- 6N (99.9999%)

### Oxidation and Shelf Life

**Gallium** is corrosive to most metals. For this reason, it should be stored in regulation-approved containers. **Pure gallium**, as it applies to round shot and formless metal, has a shelf life of 1 year when stored at <20°C.

### Typical Impurities

Impurity	Grade		
	4N	5N	6N
Ag	<1	<1	0.5 max
Bi	2 max	2 max	0.5 max
Cd	<1	<1	0.25 max
Cu	10 max	2 max	0.5 max
Fe	2 max	1 max	0.5 max
Ni	5 max	1 max	0.5 max
Pb	15 max	3 max	0.5 max
Sn	15 max	3 max	0.5 max
Ti	<1 max	<1 max	0.5 max
Tl	5 max	2 max	0.5 max
Zn	<1	<1	0.25 max
<b>Total ppm level</b>	<b>&lt;100</b>	<b>&lt;10</b>	<b>&lt;1</b>

Please note that the above ppm levels are calculated averages from past production lots and do not represent the maximum, minimum, or lot-specific levels. The ppm levels in the table should not be used in designing product specifications. Impurities will vary from one lot of **gallium** to another, but the total impurities will be below the maximum allowed in each grade:

- 4N grade: total impurities <100ppm
- 6N grade: total impurities <1ppm

Please let us know if you have specific requirements for one or two elemental impurities and we will do our best to accommodate your specifications for those impurities.

### Technical Support

Indium Corporation sets the industry standard in providing rapid response, onsite technical support for our customers worldwide. Indium Corporation's team of Technical Support Engineers can provide expertise in all aspects of Materials Science.

### Safety Data Sheets

The SDS for this product can be found online at <http://www.indium.com/sds>

This product data sheet is provided for general information only. It is not intended, and shall not be construed, to warrant or guarantee the performance of the products described which are sold subject exclusively to written warranties and limitations thereon included in product packaging and invoices. All Indium Corporation's products and solutions are designed to be commercially available unless specifically stated otherwise.

All of Indium Corporation's solder paste and preform manufacturing facilities are IATF 16949:2016 certified. Indium Corporation is an ISO 9001:2015 registered company.

## From One Engineer To Another®

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