

INCO® NICKEL PELLETS

** THIS DATA SHEET IS PREPARED IN COMPLIANCE WITH EU DIRECTIVE 2001/58/EC**

1. Substance and Company Identification

Identification of the product:

INCO® Nickel Pellets:

Other names: Melting Nickel

Used in nickel alloys and stainless steel manufacture

C.A.S. Number 7440-02-0

EINECS Number 231-111-4

Company Identification:

INCO Europe Limited, Clydach Refinery, Clydach, Swansea, Wales, UK, SA6 5QR.

Emergency Telephone Number 24h: +44-(0)1792-842501 Fax: +44-(0)1792- 841357

2. Composition

Hazardous Ingredients	Typical Composition
Nickel	100%

3. Hazards Identification

Xn – Harmful - Category 3 Carcinogen

R40 - Limited evidence of a carcinogenic effect.

R43 - May cause sensitisation skin contact.

As supplied this product does not pose a health hazard due to inhalation. User operations may generate inhalable dusts. If user operations change the substance to other physical or chemical forms, whether as end products, intermediates or fugitive emissions, the user must determine the health hazards of such forms.

4. First Aid Measures

Ingestion Seek medical attention.

Inhalation Seek medical attention.

Skin Wash thoroughly with water. For rashes seek medical advice. Show label or data sheet if possible.

Eyes Irrigate eyeball thoroughly with water for at least 10 minutes. If discomfort persists seek medical attention.

Wounds Cleanse thoroughly to remove any nickel particles.

5. Fire Fighting Measures

Suitable extinguishing media: Any, type to be selected according to material in the immediate neighbourhood

Special protective equipment for fire fighting: None needed. Wear protective equipment if required for other materials within the immediate vicinity

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6. Accidental Release Measures

Person related precautionary measures: Avoid generation of dusty atmospheres. Do not inhale dusts.

Environmental protection measures: No specific measures needed

Procedures for cleaning/absorption: Pick up and replace in original container. Nickel containing material is normally collected to recover nickel values.

7. Handling and Storage

Handling: Prevent the generation of inhalable dusts e.g. by the use of suitable ventilation. Do not inhale dusts. Wear appropriate nationally approved respirators if handling is likely to cause the concentration limits of airborne nickel to exceed the locally prescribed exposure limits. Wear suitable protective clothing and gloves. As packed nickel product may constitute a manual handling risk.

Storage: Keep in the container supplied, and keep the container closed when not in use. Containers should be stored under cover in a clean and dry environment.

8. Exposure Controls/Personal Protection

Exposure limit values: Occupational exposure limits expressed as Ni in inhalable particle size fraction:

TRK (mg/m ^{3*})	TLV (mg/m ^{3*})	WEL (mg/m ^{3*})
0.5	1.5	0.5

Maintain airborne nickel levels as low as possible.

Occupational exposure controls:

a) *Respiratory protection:* As supplied this product does not pose a health hazard due to inhalation. Ventilation may be required if user operations change it to other physical or chemical forms, whether as end products, intermediates or fugitive emissions, which are inhalable.

b) *Eye protection:* None.

c) *Hand and skin protection:* Avoid skin contact. Wear suitable protective clothing and gloves, which should be selected specifically for the working place, dependant on the concentration and quantity of the hazardous material being handled. Wash skin thoroughly after handling and before eating, drinking or smoking. Launder clothing and gloves as needed.

9. Physical and Chemical Properties

Silver grey, odourless metallic spheroids.

Molecular weight of nickel	58.71
pH	N/A
Boiling Point/ boiling range	2732 °C
Melting Point/ melting range	1453 °C
Flash Point	N/A
Auto flammability	N/A
Explosive Properties	Not explosive
Oxidising properties	Not oxidising
Vapour pressure	N/A
Solubility - cold water	Insoluble
Solubility - hot water	Insoluble
Partition coefficient	N/A
Viscosity	N/A
Specific gravity of nickel	8.9 g/m ³
Packaged density	5.4 – 6.0 g/cm ³
Size	2-20mm dia
Magnetic properties	Ferromagnetic

10. Stability and Reactivity

Conditions to be avoided: None.

Substances to be avoided: This product can react vigorously with acids to liberate hydrogen, which can form explosive mixtures with air.

Hazardous decomposition products: None

11. Toxicological Information

Acute Toxicity:

a) *Oral:* Non toxic - LD₅₀ ORAL RAT >9000 mg/kg

b) *Inhalation:* One case has been reported of a fatality following extreme exposure at an estimated 382 mg Ni/m³. A plasma spraying operative died of pneumonia 13 days after exposure to nickel powder particles. The post mortem diagnosis was shock lung.

c) *Dermal:* No information available.

Corrosivity / Irritation:

a) *Respiratory Tract:* None

b) *Skin:* see sensitization section.

c) *Eyes:* Mechanical irritation may be expected.

Sensitization:

a) *Respiratory tract:* Nickel metal induced asthma is very rare. 3 case reports are available; the data is not sufficient to conclude that nickel metal is classified as a respiratory sensitizer.

b) *Skin:* Nickel metal is a well known skin sensitizer. Direct and prolonged skin contact with metallic nickel may induce nickel allergy.

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Repeated dose toxicity:

- a) *Oral:* No information available
- b) *Inhalation:* Animal studies (rats) show that repeated dose inhalation of nickel damages the lung. Chronic inflammation, lung fibrosis and accumulation of nickel particles were observed.
- c) *Dermal:* Direct and prolonged contact with nickel metal may cause nickel sensitivity resulting in skin allergy.

*Mutagenicity /
Reproductive toxicity:*

No data.

Carcinogenicity:

- a) *Ingestion:* The U.S. National Institute for Occupational Safety and Health (NIOSH) concluded that there is no evidence that nickel metal is carcinogenic when ingested.
- b) *Inhalation:* There is limited information available from inhalation and intratracheal studies in animals. To date, there is no evidence that nickel metal causes cancer in humans based on epidemiology data from workers in the nickel producing and nickel consuming industries.
- c) *Injection:* Implants and injections of nickel metal in animals have produced tumors at the local sites. IARC (1999) concluded that there is sufficient evidence in experimental animals for the carcinogenicity of metallic nickel implants and for nickel alloy powder containing ~66% Ni 13-16% chromium and 7% for nickel alloy powder iron.

12. Ecological Information

This material is not readily degradable and is not classified as dangerous or harmful to the environment.

13. Disposal Considerations

Nickel containing material is normally collected to recover nickel values. Should disposal be deemed necessary follow local regulations.

14. Transport Information

International Maritime Dangerous Goods Code	Not Regulated.
International Civil Aviation Organization Technical Instructions for the Carriage of Dangerous Goods by Air	Not Regulated.
U.S. Dept. of Transportation Regulations	Not Regulated.
Canadian Transportation of Dangerous Goods Act	Not Regulated.
European Agreement Concerning the International Carriage of Dangerous Goods by Road	Not Regulated.

15. Regulatory Information

Nickel metal is classified as a Category 3 carcinogen "a substance which causes concern for man owing to the possible carcinogenic effect but in respect of which the available information is not adequate for making a satisfactory assessment", by the EU in Directive 67/548/EEC (Classification, Packaging and Labelling Directive) and in the UK in the Chemicals Hazard Information and Packaging for Supply Regulations 2002 and as such the following risk and safety phrases are applicable.

Xn - Harmful - Category 3 Carcinogen

R40 - Limited evidence of a carcinogenic effect.

R43 - May cause sensitisation by skin contact.

S22 - Do not breathe dust.

S36/37 - Wear suitable protective clothing and gloves.

16. Other Information

Medical staff should note that this data sheet has been lodged with the following Poisons Information Centre :

National Poison Centre Phone line : +44-(0)870-600-6266

E- Mail : wnpu@compuserve.com

Fax : +44-(0)2920-704357

17. Notes and Bibliography

Inco is the Trademark of the **Inco** family of companies.

Disclaimer: The information in this Data Sheet is provided in good faith and is accurate to **Inco**'s best knowledge and belief but except as implied by law, no representation or warranty is given in relation to the information and **Inco** accepts no liability.

References are available, on request.

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