

MATERIAL SAFETY DATA SHEET

Revision date: January 21, 2011
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1. Product and Company Information

Name of material : C7035 (OLIN7035)
Classification : Copper Alloy

Company Name : **DOWA-OLIN METAL CORPORATION**
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2. Hazards Identification

2-1 Nickel

GHS Classification

Physical Hazards

Explosives	: Not applicable
Flammable gases	: Not applicable
Flammable aerosols	: Not applicable
Oxidizing gases	: Not applicable
Gases under pressure	: Not applicable
Flammable liquids	: Not applicable
Flammable solids	: Classification not possible
Self-reactive substances and mixtures	: Not applicable
Pyrophoric liquids	: Not applicable
Pyrophoric solids	: Not classified
Self-heating substances and mixtures	: Classification not possible
Substances and mixture which, in contact with water, emit flammable gases	: Not classified
Oxidizing liquids	: Not applicable
Oxidizing solids	: Not applicable
Organic peroxides	: Not applicable
Corrosive to metals	: Classification not possible

Health Hazards

Acute toxicity (oral)	: Not classified
Acute toxicity (skin)	: Classification not possible
Acute toxicity (inhalation: gas)	: Not applicable
Acute toxicity (inhalation: vapour)	: Classification not possible
Acute toxicity (inhalation: dust, mist)	: Classification not possible
Skin corrosion / irritation	: Classification not possible
Serious eye damages / eye irritation	: Classification not possible
Respiratory sensitization	: Category1
Skin sensitization	: Category1
Germ cell mutagenicity	: Classification not possible
Carcinogenicity	: Category2
Reproductive toxicity	: Category1B
Specific target organ toxicity: single exposure	: Category1 (respiratory apparatus, kidney)
Specific target organ toxicity: repeated exposure	: Category1 (respiratory apparatus)
Aspiration hazard	: Classification not possible

Environmental Hazards

Aquatic toxicity (acute)	: Classification not possible
Aquatic toxicity (chronic)	: Category4

Pictogram



2-2 Cobalt

GHS Classification

Physical Hazards

Explosives	: Not applicable
Flammable gases	: Not applicable
Flammable aerosols	: Not applicable
Oxidizing gases	: Not applicable
Gases under pressure	: Not applicable
Flammable liquids	: Not applicable
Flammable solids	: Classification not possible
Self-reactive substances and mixtures	: Not applicable
Pyrophoric liquids	: Not applicable
Pyrophoric solids	: Classification not possible
Self-heating substances and mixtures	: Classification not possible
Substances and mixture which, in contact with water, emit flammable gases	: Not classified
Oxidizing liquids	: Not applicable
Oxidizing solids	: Not applicable
Organic peroxides	: Not applicable
Corrosive to metals	: Classification not possible

Health Hazards

Acute toxicity (oral)	: Not classified
Acute toxicity (skin)	: Classification not possible
Acute toxicity (inhalation: gas)	: Not applicable
Acute toxicity (inhalation: vapor)	: Classification not possible
Acute toxicity (inhalation: dust)	: Classification not possible
Acute toxicity (inhalation: mist)	: Not applicable
Skin corrosion / irritation	: Classification not possible
Serious eye damages / eye irritation	: Classification not possible
Respiratory sensitization	: Category 1
Skin sensitization	: Category 1
Germ cell mutagenicity	: Classification not possible
Carcinogenicity	: Category 2
Reproductive toxicity	: Category 2
Specific target organ toxicity: single exposure	: Category 3 (Respiratory tract irritation)
Specific target organ toxicity: repeated exposure	: Category 1 (respiratory apparatus)
Aspiration hazard	: Classification not possible

Environmental Hazards

Aquatic toxicity (acute)	: Classification not possible
Aquatic toxicity (chronic)	: Category 4

Pictogram



2-3 Copper

GHS Classification

Physical Hazards

Explosives	: Not applicable
Flammable gases	: Not applicable
Flammable aerosols	: Not applicable
Oxidizing gases	: Not applicable
Gases under pressure	: Not applicable
Flammable liquids	: Not applicable
Flammable solids	: Classification not possible
Self-reactive substances and mixtures	: Not applicable
Pyrophoric liquids	: Not applicable
Pyrophoric solids	: Classification not possible
Self-heating substances and mixtures	: Classification not possible
Substances and mixture which, in contact with water, emit flammable gases	: Classification not possible

Oxidizing liquids : Not applicable
 Oxidizing solids : Not applicable
 Organic peroxides : Not applicable
 Corrosive to metals : Classification not possible

Health Hazards

Acute toxicity (oral) : Classification not possible
 Acute toxicity (skin) : Classification not possible
 Acute toxicity (inhalation: gas) : Not applicable
 Acute toxicity (inhalation: vapor) : Not applicable
 Acute toxicity (inhalation: dust, mist) : Classification not possible
 Skin corrosion / irritation : Classification not possible
 Serious eye damages / eye irritation : Classification not possible
 Respiratory sensitization : Classification not possible
 Skin sensitization : Classification not possible
 Germ cell mutagenicity : Classification not possible
 Carcinogenicity : Not classified
 Reproductive toxicity : Classification not possible
 Specific target organ toxicity:
 single exposure : Category3 (Respiratory tract irritation)
 Specific target organ toxicity:
 repeated exposure : Category1 (Liver)
 Aspiration hazard : Classification not possible

Environmental Hazards

Aquatic toxicity (acute) : Classification not possible
 Aquatic toxicity (chronic) : Category4

Pictogram



3. Specification of substance

Chemical name : Cu-Ni-Si-Mg alloy

Element	Ni	Co	Si	Cu
CAS No.	7440-02-0	7440-48-4	7440-21-3	7440-50-8
Identification No. by PRTR Law	Class 1 – No. 308	Class 1 - No. 172	-	-
Enforcement Serial No. by Industrial Safety and Health Laws	Appendix No. 9-418	Appendix No. 9-172	-	Appendix No.9-379
Chemical Composition (Nominal wt%)	1.5	1.1	0.6	Bal.

4. First aid

- 4-1** Caught in the eyes:
Immediately flush out dust with sufficient clean water and get physician's treatment for pain or uncomfortable feel.
- 4-2** Struck to the skin: Soap up the portion.
- 4-3** Inhaled: If a large quantity of vapors and particles are inhaled, move the patient to a place of clean air immediately. Give the patient oxygen inhalation and have him/her receive immediate physician's treatments in case it seems to be necessary.
- 4-4** Swallowed: If large quantities of vapors and particles are swallowed, make him/her vomit and then have him/her physician's treatments immediately.

5. Action for fire

Extinguishing: -- (Incombustibles)

6. Action for leakage

No requirement for solid metal product.

7. Notes for handling and storage

Handling: To prevent the inhalation of vapors or particles, wear personal protection such as a mask in welding or grinding processes.
The cut ends or edges of the strip are sharp enough for cut, so take sufficient care when handling.

Storage: Do not store together with acids.

8. Avoidance of exposure

Acceptable concentration:

Japan Society for Occupational Health:

Ni 1mg/m³

Co 0.05mg/m³

OSHA PEL *

Ni 1mg/m³

Co 0.1mg/m³

ACGIH TWA **

Cu 1mg/m³ (dust)

Cu 0.2mg/m³ (fume or vapor)

Protective outfit

For mouth: Dustproof mask

For eyes: Dustproof glasses

For hands: Rubber or plastic gloves

For body: --

* OSHA PEL: Occupational Safety and Health Administration U.S.Department
Permissible Exposure Limit

** ACGIH TWA: American Conference of Governmental Industrial Hygienists
Time Weighted Average

9. Physical / chemical properties

Appearance : Metallic brightness

Melting point : 1075

Specific gravity : 8.82

10. Hazardous information

Stability / reactivity: Stable under normal handling conditions.

11. Toxicological information

(No information about the alloy, but information on each element is shown below.)

Acute toxicity:

Orally administered - mouse LD50 >4000mg/kg (Copper dusts)

Nickel and Cobalt dust or fume can irritate nose, mouth, throat, eyes, respiratory organ and lungs. They may cause allergic dermatitis, cough, wheezing, shortness of breath and chest tightness.

Ingestion of Nickel and Cobalt dust in large amounts may affect blood, heart, thyroid and spleen.

Local Effect:

Prolonged and repeated contact with Nickel and Cobalt d may cause skin sensitization.

Chronic Toxicity:

Prolonged and repeated inhalation and exposure of Nickel and Cobalt may cause asthma, and may also affect lungs.

Carcinogenicity

Nickel is classified as 2B (possibly carcinogenic to humans) by IARC*, and A5 (not suspected as human carcinogen) by ACGIH.

Cobalt is classified as 2B (possibly carcinogenic to humans) by IARC*, and A3 (animal carcinogen) by ACGIH.

* IARC: International Agency for Research on Cancer

12. Ecological Information

(No information about the alloy, but information on each element is shown below.)

Water Pollution Control Law:

Life environment clause (for Copper)

Cobalt is toxic to aquatic organisms. Bioaccumulation of this chemical may occur in fish and in mollusks.

13. Note for scrapping

C7035 should be collected and recycled as a metal.
Contact scrapping agent.

14. Note for transportation

Handle with care when transporting as follows:
Take care not to allow the air to cause corrosion, turnover, drop or packing disorder.

15. Applicable legislation

(No information about the alloy, but information on each element is shown below.)

Water Pollution Control Law:

Life environment clause (for Copper)

PRTR Law: Nickel and Cobalt are Class 1 – designated chemical substances

C7035 does not correspond to Poisons, Deleterious Substances, Specific Deleterious Substances,
in Poisonous and Deleterious Substances Control Law.

16. Other Information

We have tried to make it as accurate and useful as possible, but can take no responsibility for
its use, misuse or accuracy. We have not verified this information, and can not guarantee that
it is up-to-date.