



# SAFETY DATA SHEET

Product name: nVent® ERICO® Cadweld® Plus  
Supersedes date:  
SDS-ID:

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Revision: 2021-05-03  
Version number: NZ-EN/1.0

## SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

### Product identifier

Product name: nVent® ERICO® Cadweld® Plus  
Inclusive of material types: F20, F80, F33, XF19, F76  
Applicable prefixes: ACB, ACC, SCC, SB, PB, CA, XF

### Relevant identified uses of the substance or mixture and uses advised against

Application: Exothermic Welding material

### Details of the supplier of the safety data sheet

Manufacturer: nVent  
ERICO International Corporation  
34600 Solon Road  
Solon, Ohio 44139  
Tel:(440) 248-0100

Supplier: Contract Connections Ltd.  
19A Zelanian Drive, East Tamaki  
2013 Auckland  
New Zealand  
Tel:+64 92744049  
office@contractconnections.co.nz

Further information can be obtained from: erico.compliance@nvent.com

### Emergency telephone number

Emergency telephone: New Zealand Poisons Centre: 0800 764 766 (24 hours a day, 7 days a week).

Chemtel  
+01-813-248-0585 International

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## SECTION 2: HAZARDS IDENTIFICATION

### Classification of the substance or mixture

HSNO: 6.1D  
6.1D  
6.4A  
6.9B  
9.1A

### Label elements



### WARNING

Contains: Copper (I) oxide (25-85%)  
Copper (II) oxide (1-30%)  
Copper, powder (1-30%)

H302	Harmful if swallowed.
H332	Harmful if inhaled.
H319	Causes serious eye irritation.
H371	May cause damage to organs.
H400	Very toxic to aquatic life.
P260	Do not breathe dust/fume.
P280	Wear eye protection and gloves.
P301 + P312	IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell.
P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P310	Immediately call a POISON CENTER or doctor/physician.
P273	Avoid release to the environment.

### Other hazards

PBT/vPvB: This product does not contain any PBT or vPvB substances.

Other: Dust may form explosive mixture with air. Improper use of the product or inadequate preparation of the conductors, moulds or surroundings can result in aggressive reactions. Self-propagating high temperature reaction will occur if heated above ignition temperature. Generates molten metal in excess of 2000°C, slag and dense, dusty smoke. The molten product can cause serious burns. Inhalation of powder or fumes may cause metal fume fever. Exposure to reaction by-products: See section 8.

## SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

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## **Mixtures**

Only classified substances above threshold limits or substances with an exposure limit are shown.

HSNO:

<u>%:</u>	<u>CAS-No.:</u>	<u>EC No.:</u>	<u>REACH Reg. No:</u>	<u>Chemical name:</u>	<u>Hazard classification:</u>	<u>Notes:</u>
25-85	1317-39-1	215-270-7	-	Copper (I) oxide	6.1D (H302) 6.1D (H332) 6.4A (H319) 6.9B (H371e) 9.1A (H400) 9.3B (H432)	
1-30	1317-38-0	215-269-1	-	Copper (II) oxide	6.1D (H302) 6.4A (H319) 6.9B (H371) 9.1A (H400) 9.1C (H412)	
1-30	7440-50-8	231-159-6	-	Copper, powder	6.1D (H302) 6.4A (H319) 6.9B (H371) 9.1A (H400) 9.1C (H412) 9.2D (H423) 9.3C (H433)	
5-10	7429-90-5	231-072-3	-	Aluminium, solid	4.1.1A (H228)	
1-3	7440-31-5	231-141-8	-	Tin metal	6.1D (H302) 6.4A (H319) 9.1C (H402)	

Reference: The full text for all hazard statements is displayed in section 16.

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## SECTION 4: FIRST AID MEASURES

### Description of first aid measures

Molten product will cause skin burns and if in contact with eyes while in a molten state may cause serious damage.

Inhalation: Inhalation of welding fumes/Dust inhalation: Move into fresh air and keep at rest. In case of persistent throat irritation or coughing: Seek medical attention and bring these instructions.

Skin contact: Remove contaminated clothes and rinse skin thoroughly with water. If material is hot, treat for thermal burns and get immediate medical attention.

Eye contact: Dust in the eyes: Do not rub eye. Immediately flush with plenty of water for at least 15 minutes. Remove any contact lenses and open eyelids widely. If irritation persists: Seek medical attention and bring along these instructions.

Ingestion: Immediately rinse mouth and drink 1-2 glasses of water. Keep person under observation. If uncomfortable: Transportation to hospital. Bring along these instructions.

### Most important symptoms and effects, both acute and delayed

Symptoms/effects: Inhalation of powder or fumes may cause metal fume fever. Symptoms like headache, fatigue and nausea may appear. See section 11 for more detailed information on health effects and symptoms.

### Indication of any immediate medical attention and special treatment needed

Medical attention/treatments: Burns (in contact with molten metal, slag or hot equipment): Flush with water immediately. While flushing, remove clothes which do not adhere to affected area. Call an ambulance. Continue flushing during transport to hospital.

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## SECTION 5: FIREFIGHTING MEASURES

### Extinguishing media

Extinguishing media: Extinguish with dry sand and/or flood with large amounts of water.

Extinguishing media which are not suitable: Hand water buckets or hand storage pumps. Molten metal contact with water can cause small pockets of superheated steam.

Use fire-extinguishing media appropriate for surrounding materials.

### Special hazards arising from the substance or mixture

Specific hazards: During fire, gases hazardous to health may be formed.  
Ignition temperature: >950°C

In the event that the packaging materials are ignited, the immediate and direct application of large quantities of water will effectively eliminate the spread of fire to the surrounding areas. The ignition of the packaging materials may, in rare cases, lead to ignition. Direct application of a continuous heavy stream of water is recommended.

Ignition of large quantities of exothermic materials may result in large volumes of dense smoke.

### Advice for firefighters

Protective measures for fire-fighters: Selection of respiratory protection for fire fighting: follow the general fire precautions indicated in the workplace.

## SECTION 6: ACCIDENTAL RELEASE MEASURES

### Personal precautions, protective equipment and emergency procedures

Personal precautions: Avoid inhalation of dust. Do not breathe fumes. Avoid contact with skin and eyes. Follow precautions for safe handling described in this safety data sheet.

Remove sources of ignition. Ventilate well.

### Environmental precautions

Environmental precautions: Precaution should be taken to prevent hot material and reaction byproducts from contact with combustible materials in surrounding areas. Avoid spreading dust or contaminated materials. Avoid discharge to the aquatic environment. Contact local authorities in case of spillage to drain/aquatic environment.

### Methods and material for containment and cleaning up

Methods for cleaning up: Remove sources of ignition. Sweep up spilled substance and remove to safe place.  
For large spills use natural fiber brush or broom with a conductive, non-sparking pan.

### Reference to other sections

Reference: For personal protection, see section 8. For waste disposal, see section 13.

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## SECTION 7: HANDLING AND STORAGE

### **Precautions for safe handling**

**Safe handling advice:** Avoid inhalation of dust. Do not breathe fumes. Avoid contact with skin and eyes. Observe good chemical hygiene practices. nVent ERICO Cadweld Plus Welding and Filler Materials are designed for use in nVent ERICO Cadweld equipment only. Use of improper or damaged equipment can lead to exposure to molten metal and reaction byproducts, resulting in personal injury.

**Technical measures:** Do not smoke or use open fire or other sources of ignition. Work practice should minimise risk of contact.

**Technical precautions:** Confined space: Local exhaust is recommended.

### **Conditions for safe storage, including any incompatibilities**

**Technical measures for safe storage:** nVent ERICO Cadweld Plus Welding and Filler Materials should be stored in a clean, dry and secure location. Storage should include provisions to minimize rough handling, excessive vibration and physical abuse. All outer packages must be stored in accordance with label markings.

**Storage conditions:** If evidence is present of damaged or contaminated products, these units should not be used.

If proper storage is maintained, nVent ERICO Cadweld Plus Materials do not exhibit any storage or shelf life.

### **Specific end use(s)**

**Specific use(s):** Welding material

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## SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

### Control parameters

A detailed fume analysis was conducted on nVent ERICO Cadweld Plus Welding Materials. Reaction byproducts were tested for total dust, respirable dust, metals, acids, fluorides, various elements, and volatile organic compounds (VOC's). All sampling and analysis followed methodologies dictated by the National Institute of Occupational Safety and Health (NIOSH) and by the Occupational Safety and Health Administration (OSHA). A certified Industrial Hygienist did the sample collection and independent labs conducted all analytical work. Data collected was evaluated and compared to limits set by the American Conference of Governmental Industrial Hygienists (ACGIH) and OSHA. As a worst case scenario, calculations were completed based on a sealed 800 ft<sup>3</sup> room with no ventilation. These calculations would indicate that the copper fume PEL would be the limiting factor. Under normal outdoor use or in ventilated areas threshold limits are beyond any expected exposure limits.

Occupational exposure limits:

<u>CAS-No.:</u>	<u>Chemical name:</u>	<u>Exposure limits:</u>	<u>Type:</u>	<u>Notes:</u>	<u>References</u>
7429-90-5	Aluminium, Welding fumes Al	5 mg/m <sup>3</sup>	TWA	-	WES
7429-90-5	Aluminium, Metal dust Al	10 mg/m <sup>3</sup>	TWA	-	WES
-	Copper and its inorganic compounds, respirable dust Cu	0.01 mg/m <sup>3</sup>	TWA	dsen	WES
7440-31-5	Tin metal -	2 mg/m <sup>3</sup>	TWA	-	WES

Notes:

dsen: Dermal sensitiser.

WES: Workplace Exposure Standards and Biological Exposure Indices (11th Edition - 2019).

### Exposure controls

#### Engineering measures:

Provide adequate ventilation. Observe Occupational Exposure Limits and minimize the risk of inhalation of dust and fumes.

#### Personal protection:

Personal protection equipment should be chosen according to the relevant standards and in discussion with the supplier of the personal protective equipment.

#### Respiratory equipment:

Normal use precludes use of special protection as material is generally used out of doors, in small quantities and is of short duration. In case of inadequate ventilation and work of long duration or on large surface areas in confined rooms. Wear suitable respiratory equipment for dusts and metal fumes.

#### Hand protection:

Heat insulated protective gloves. Recommended for handling hot equipment.

#### Eye protection:

Wear goggles/face shield. Avoid direct eye contact with "flash" of light from reaction.

#### Skin protection:

Use protective clothing, which covers arms and legs.

#### Hygiene measures:

Wash hands after handling. Change contaminated clothing.

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## SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

### Information on basic physical and chemical properties

Form: Granular.  
Colour: Grey-black  
Odour: Odourless.  
pH: Not available.  
Melting point / freezing point: 1093°C / 2000°F  
Boiling point: Not available.  
Flash point: Not relevant.  
Evaporation rate: Not relevant.  
Vapour pressure: Not relevant.  
Vapour density: Not relevant.  
Solubility: Insoluble in water  
Partition coefficient (n-octanol/water): Not available.  
Auto-ignition temperature (°C): > 950°C / 1742°F  
Decomposition temperature (°C): Not available.  
Viscosity: Not relevant.  
Explosive properties: Not available.  
Oxidising properties: Not available.  
**Other information**  
Other data: SPECIFIC GRAVITY (water=1): 5.5

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## SECTION 10: STABILITY AND REACTIVITY

### **Reactivity**

Reactivity: See hazardous reactions.

### **Chemical stability**

Stability: Stable.  
Not sensitive to vibrations, shock or impact and is not subject to spontaneous ignition.

### **Possibility of hazardous reactions**

Hazardous Reactions: Aggressive reactions are possible if excess moisture is present in the mould or on the conductors to be welded. Care should be taken to ensure proper preparation in accordance with instruction prints.

### **Conditions to avoid**

Conditions/materials to avoid: Temperatures above ignition point. (950 °C)

### **Incompatible materials**

Incompatible materials: Typical of problems associated with molten metals.

### **Hazardous decomposition products**

Hazardous decomposition products: None under normal conditions. Polymerization will not occur.

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## SECTION 11: TOXICOLOGICAL INFORMATION

### Information on toxicological effects

Acute Toxicity (Oral): Harmful if swallowed.

Acute Toxicity (Dermal): Based on available data, the classification criteria are not met.

Acute Toxicity (Inhalation): Harmful if inhaled.

Skin Corrosion/Irritation: Based on available data, the classification criteria are not met.

Serious eye damage/irritation: Causes serious eye irritation.

Respiratory or skin sensitisation: Based on available data, the classification criteria are not met.

Germ cell mutagenicity: Based on available data, the classification criteria are not met.

Carcinogenicity: Based on available data, the classification criteria are not met.

Reproductive Toxicity: Based on available data, the classification criteria are not met.

STOT - Single exposure: May cause damage to organs.

STOT - Repeated exposure: Based on available data, the classification criteria are not met.

Aspiration hazard: Based on available data, the classification criteria are not met.

Inhalation: Dust may irritate throat and respiratory system and cause coughing. May cause damage to organs. Heating above the melting point releases metallic oxides which may cause metal fume fever by inhalation. The symptoms are shivering, fever, malaise and muscular pain.

Skin contact: Dust has an irritating effect on moist skin. Prolonged and/or repeated contact: May cause eczema-like skin disorders (dermatitis). The molten product can cause serious burns.

Eye contact: Particles/fumes in the eyes may cause discomfort/irritation.

Ingestion: Ingestion may cause nausea, headache, dizziness and intoxication.

Specific effects: Frequent inhalation of dust over a long period of time increases the risk of developing lung diseases. Copper oxide may by repeated or prolonged inhalation occasionally cause ulceration and perforation of the nasal septum. Long term exposure to copper containing dusts may cause allergic dermatitis.

Toxicological data: LD50 (oral, rat): 1340 mg/kg (Copper (I) oxide)

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## SECTION 12: ECOLOGICAL INFORMATION

### Toxicity

Ecotoxicity: Very toxic to aquatic life.

Copper (I) oxide:  
M-factor (acute): 100  
Copper (II) oxide:  
M-factor (acute): 10  
Copper, powder:  
M-factor (acute): 1

### Persistence and degradability

Degradability: The product solely consists of inorganic compounds which are not biodegradable.

### Bioaccumulative potential

Bioaccumulative potential: No data available on bioaccumulation.

### Mobility in soil

Mobility: The product is not volatile but may be spread by dust-raising handling.

### Results of PBT and vPvB assessment

PBT/vPvB: This product does not contain any PBT or vPvB substances.

### Other adverse effects

Other adverse effects: None known.

## SECTION 13: DISPOSAL CONSIDERATIONS

### Waste treatment methods

Dispose of waste and residues in accordance with local authority requirements.  
Waste is classified as hazardous waste.

Waste from residues: L-Code: 16 05 07

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## SECTION 14: TRANSPORT INFORMATION

The product is covered by international regulation on the transport of dangerous goods (IMDG, IATA, ADR/RID).

### UN number

UN-No: 3077

### UN proper shipping name

Proper Shipping Name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Copper (I) oxide)

### Transport hazard class(es)

Class: 9

### Packing group

PG: III

### Environmental hazards

Marine pollutant: Yes.

Environmentally Hazardous substance: Yes.

### Special precautions for user

Special precautions: -

### Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Transport in bulk: Not relevant.

## SECTION 15: REGULATORY INFORMATION

### Safety, health and environmental regulations/legislation specific for the substance or mixture

All chemicals included in the product are NZIoC listed or fall under notification exceptions.

Special provisions: As a general rule, persons under 15 years of age are not allowed to work with this product. Users must be carefully instructed in the proper work procedure, the dangerous properties of the product and the necessary safety instructions.

National regulation: Hazardous Substances and New Organisms Act 1996 (HSNO), as amended 2018.  
Hazardous Substances (Minimum Degrees of Hazard) Notice 2017.  
Hazardous Substances (Classification) Notice 2017.  
Hazardous Substances (Safety Data Sheets) Notice 2017.  
Workplace Exposure Standards and Biological Exposure Indices (11th Edition - 2019).  
New Zealand Waste List.  
Health and Safety at Work (General Risk and Workplace Management) Regulations 2016 (the GRWM Regulations).  
New Zealand Inventory of Chemical Substances (NZIoC).

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## SECTION 16: OTHER INFORMATION

The user must be instructed in the proper work procedure and be familiar with the contents of these instructions.

Abbreviations and acronyms used in the safety data sheet: LD50 = Lethal Dose 50%.  
PBT = Persistent, Bioaccumulative and Toxic.  
vPvB = very Persistent and very Bioaccumulative.

Additional information: Classification according to HSNO: Calculation method.

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### Wording of H-statements:

H228	Flammable solid.
H261	In contact with water releases flammable gases.
H302	Harmful if swallowed.
H315	Causes skin irritation.
H319	Causes serious eye irritation.
H332	Harmful if inhaled.
H335	May cause respiratory irritation.
H371	May cause damage to organs.
H371e	May cause damage to organs if inhaled and if swallowed.
H400	Very toxic to aquatic life.
H402	Harmful to aquatic life.
H412	Harmful to aquatic life with long lasting effects.
H423	Harmful to the soil environment.
H432	Toxic to terrestrial vertebrates.
H433	Harmful to terrestrial vertebrates.

The information on this data sheet represents our current data and is reliable provided that the product is used under the prescribed conditions and in accordance with the application specified on the packaging and/or in the technical guidance literature. Any other use of the product which involves using the product in combination with any other product or any other process is the responsibility of the user.