

SAFETY DATA SHEET

CE 001 Carbon Steel Covered Electrodes



Version number: 18
Replaces SDS: 2009-11-23
Issued: 2015-02-05

Not for sale in the USA

Section 1. IDENTIFICATION OF THE SUBSTANCE / MIXTURE AND OF THE COMPANY / UNDERTAKING

1.1 Product identifier

Trade name Ferrospeed, Vortic Marine, Bolcraft, Bolmarine, Bolarc 1400, Bolweld, Zodian Universal, Ferrocra^{ft} 11, Ferrocra^{ft}61, Ferroweld-1 7016, Ferroweld-2 7018, Ferrocra^{ft} 7016.

Article-no

Product/Article	Diameter(mm)	Packaging (kg)	Part Number
Ferrospeed	2.5	3	YBD1811102
Ferrospeed	3.2	5	YBD1811103
Ferrospeed	4.0	5	YBD1811104
Ferrospeed	5.0	5	YBD1811105
Ferrocra ^{ft} 11	2.5	2	YBD1811202
Ferrocra ^{ft} 11	3.2	3	YBD1811203
Ferrocra ^{ft} 11	4.0	3	YBD1811204
Ferrocra ^{ft} 11	5.0	3	YBD1811205
Ferrocra ^{ft} 61	2.5	2	YBD1811302
Ferrocra ^{ft} 61	3.2	3	YBD1811303
Ferrocra ^{ft} 61	4.0	3	YBD1811304
Ferrocra ^{ft} 61	5.0	3	YBD1811305
Vortic Marine	2.5	3	YBD1811402
Vortic Marine	3.2	4	YBD1811403
Vortic Marine	4.0	5	YBD1811404
Vortic Marine	5.0	5	YBD1811405
Bolcraft	3.2	3	YBD1811503
Bolcraft	4.0	3	YBD1811504
Bolcraft	5.0	5	YBD1811505
Bolmarine	2.5	3	YBD1811512
Bolmarine	3.2	3	YBD1811513
Bolmarine	4.0	3	YBD1811514
Bolarc 1400	3.2	5.15	YBD1811517
Bolarc 1400	4.0	5	YBD1811518
Bolarc 1400	5.0	5	YBD1811519
Bolarc 1400	3.2	3	YBD1811527

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Bolweld	2.5	3	YBD1811532
Bolweld	3.2	3	YBD1811533
Bolweld	4.0	3	YBD1811534
Bolweld	5.0	5	YBD1811535
Zodian Universal	2.5	3	YBD1811602
Zodian Universal	3.2	3	YBD1811603
Zodian Universal	4.0	3	YBD1811604
Zodian Universal	5.0	5	YBD1811605
Ferroweld 1 7016	2.5	2	YBD1811751
Ferroweld 1 7016	3.2	3	YBD1811752
Ferroweld 1 7016	4.0	3	YBD1811753
Ferroweld 1 7016-350mm	3.2	3	YBD1811756
Ferroweld 2 7018	2.5	2	YBD1811761
Ferroweld 2 7018	3.2	3	YBD1811762
Ferroweld 2 7018	4.0	3	YBD1811763
Ferroweld 2 7018 -350mm	3.2	3	YBD1811766
Ferrocrafft 7016	2.5	2	YBD1811782
Ferrocrafft 7016	3.2	3	YBD1811783
Ferrocrafft 7016	4.0	3	YBD1811784
Ferrocrafft 7016	5.0	3	YBD1811785

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

Article type	SMAW Un- and Low-alloyed electrodes Classification: AWS SFA 5.1/5.5 or other
Use	Electric arc welding

1.3 Details of the supplier of the safety data sheet

Supplier	Linde Bangladesh Limited
Street address	Corporate Office, 285 Tejgaon Industrial Area Dhaka-1208 Bangladesh.
Telephone	+880.2.8870322-27
Fax	+880.2.8870336/+880.2.8870329
Email	customer.service.bd@linde.com

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1.4 Emergency telephone number

Available outside office hours	Yes
Emergency phone number	+880.1711.404191

Other

Additional product information	Web site: www.linde-gas.com.bd
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Section 2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

Classification according to Regulation (EC) 1271/2008 [CLP] applicable

2.2 Label elements

Not applicable

2.3 Other hazards

When the product is used in the welding process the most important hazards are:

Overexposure to fumes and gases from welding can be dangerous to health.

Watch out for splatter, hot metal and slag. It may cause skin burn and cause fire.

Arc rays can injure eyes and burn skin. Electric shock can kill. Avoid touching live electrical parts.

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Section 3. COMPOSITION / INFORMATION ON INGREDIENTS						
3.1 Substances						
This product is a mixture and please refer to Section 3.2						
3.2 Mixtures						
Mild steel core	Fe	Mn	Cr	Ni	Cu	Si
Typical	98-99	<0.7	<0.1	<0.1	<0.1	<0.1
Flux coating	High Cellulose E6010, 6011	Rutile E6012, 6013	Basic Low Hydrogen E7016, 7018	Rutile Iron Powder E7024	Basic Iron Powder E7028	Cas No.
Limestone and/or Calcium Carbonate	-	<10	20-30	<10	10-20	1317-65-3
Magnesite (total inhalable dust) (respirable dust)	5-10	<5	-	-	-	546-93-0
Cellulose (total inhalable dust) (respirable dust)	25-60	<15	-	-	-	9004-34-6
Iron Oxides (as Fe)	<10	<10	<10	<10		1309-37-6
Inorganic Fluorides (as F)	-	<10	10-30	<10	5-15	16984-48-8
Iron powder	-	<10	10-35	10-60	10-60	7439-89-6
Manganese and its Inorganic compounds (as Mn)	5-15	5-15	<15	<15	<10	7439-96-5 and others
Rutile/Titanium Dioxide (total inhalable dust) (respirable dust)	10-35	15-60	<10	10-30	<10	13463-67-7
Silicon and Silicon Alloys, (as Si)	-	-	<5	<5	<5	7440-21-3
Silicate Binders	<5	<5	<5	<5	<5	1344-09-8
Mica (total inhalable dust) (respirable dust)	<5	<20	<5	<5	<5	12001-26-2
Quartz/Silica Respirable crystalline	<10	<15	5-60	<10	<5	14808-60-7
Kaolin (respirable dust)	-	<20	-	<5	<5	1332-58-7
Other Mineral Silicates	5-30	5-30	5-10	5-30	5-10	1332-58-7

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Section 4. FIRST AID MEASURES

4.1 Description of first aid measures

Inhalation	IF INHALED: If breathing is difficult, remove to fresh air and keep at rest in a position comfortable for breathing. Call a physician if symptoms occur.
Skin contact	Burns should be treated by a doctor.
Eye contact	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Burns from radiation, see doctor.
Ingestion	Contact a doctor if more than an insignificant amount has been swallowed.

4.2 Most important symptoms and effects, both acute and delayed

Inhalation	Inhalation of vapours may cause irritation of the respiratory system in very susceptible persons.
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4.3 Indication of any immediate medical attention and special treatment needed

Not applicable

Section 5. FIRE-FIGHTING MEASURES

5.1 Extinguishing media

Suitable extinguishing media	Carbon dioxide (CO ₂) , powder or diffuse jet of water. In case of major fire: Extinguish fire with diffuse jet of water or foam.
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5.2 Special hazards arising from the substance or mixture

Not applicable

5.3 Advice for fire fighters

Special protective equipment for fire fighters	Wear self -contained breathing apparatus
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Section 6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

General ventilation and local fume extraction must be adequate to keep fume concentrations within safe limits. Use respiratory equipment when welding in a confined space. Wear protective clothing and eye protection appropriate to arc welding. Skin contact should be avoided to prevent possible allergic reactions.

6.2 Environmental precautions

Try to prevent the material from entering drains or water courses.

6.3 Methods and material for containment and cleaning up

Not applicable

6.4 Reference to other sections

Personal protection see section 8 and for disposal see section 13. Environmental precautions, paragraph 12. See also section 7 Precautions for safe handling.

Section 7. HANDLING AND STORAGE

7.1 Precautions for safe handling

Preventive handling precautions

Ensure adequate ventilation for the welder and others. Use respiratory equipment when welding in a confined space. Wear protective clothing and eye protection appropriate to arc welding. Remove all flammable materials and liquids before welding.

General hygiene

Wash hands before breaks and immediately after handling the product.

7.2 Conditions for safe storage, including any incompatibilities

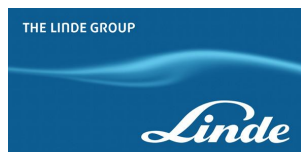
Store welding consumables inside a room without humidity. Do not store welding consumables directly on the ground or beside walls. Store away from chemical substances like acids which could cause chemical reactions.

7.3 Specific end use(s)

Welding process.

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Section 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1 Control parameters

Welding fume component	CAS No.	ES-TWA	ES-STEL
Total welding fume (particulate)	-	5	
Iron oxide fume (as Fe)	1309-37-1	5	
Manganese and its inorganic compounds (as Mn)	7439-96-5	0.2	
Silica, amorphous (total inhalable dust) (respirable dust)	-	2.0	
Magnesium oxide (as Mg) (total inhalable dust) (fume and respirable dust)	1309-48-4	10	
Titanium dioxide (total inhalable dust) (respirable dust)	13463-67-7	10	
Calcium Oxide	1305-78-8	2	
Calcium Silicate (total inhalable dust) (respirable dust)	1344-95-2	10	
Fluoride, inorganic (as F)	16984-48-8	2.5	
Nitrogen dioxide (NO ₂)	10102-44-0	3ppm	5ppm
Ozone (O ₃)	10028-15-6	0.05-0.1 ppm	0.2 ppm
Nitrogen monoxide (NO)	10102-43-9	25ppm	

8.2 Exposure controls

Environmental Exposure Control – Refer to Section 6 of this SDS

Technical precaution measures

General ventilation and local fume extraction must be adequate to keep fume concentrations within safe limits.

Eye / face protection

Wear eye protection appropriate for welding.

Safety gloves

Skin contact should be avoided to prevent possible allergic reactions.

Other skin protection

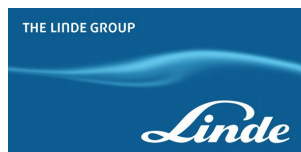
Wear body protection which helps to prevent injury from radiation, sparks and electric shock.

Respiratory protection

Use respiratory equipment when welding in a confined space. Wear protective clothing and eye protection appropriate to arc welding.

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Section 9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Appearance, colour	Grey
Appearance, physical state	Rod
Auto-ignition temperature	Not applicable
Auto-inflammability	Not auto-flammable
Decomposition temperature	Not applicable
Evaporation rate	Not applicable
Explosive properties	Not explosive
Flammability (solid gas)	Not applicable
Flash point	Not applicable
Form	Metal wire with flux coating
Initial boiling point and boiling range	Not applicable
Melting point / Freezing point	Not applicable
Odour	Odourless
Odour threshold	Not applicable
Oxidising properties	Not applicable
Partition coefficient: n-octanol / water	Not applicable
pH value	Not applicable
Relative density	Not applicable
Solubility	Not applicable
Solubility in water	Insoluble
Upper / lower flammability or explosive limits	Not applicable
Vapour density	Not applicable
Vapour pressure	Not applicable
Viscosity	Not applicable

9.2 Other information

Other Not applicable

Density	7.98g/cm ³
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Section 10. STABILITY AND REACTIVITY

10.1 Reactivity

Not applicable

10.2 Chemical stability

Stable at normal conditions.

10.3 Possibility of hazardous reactions

Not applicable

10.4 Conditions to avoid

None under normal conditions

10.5 Incompatible materials

Not applicable

10.6 Hazardous decomposition products

Welding fumes and gases. Additional fume may arise from coatings and contaminants on the base material.

Welding fume component	CAS No.	Classification (67/548EEC)	CLP (1272/2008)		Concentration of classified fume components
Aluminium oxide (Al)	1344-28-1	-	-	-	1.8 to 1.2
Barium (Ba)	7440-39-3	-	-	-	≤0.1
Bismuth oxide (Bi)	12640-40-3	-	-	-	≤0.1
Calcium (Ca)	1305-78-8	-	-	-	0.1 to 11.6
Cobalt oxide (Co)	1307-96-6	R22: Harmful if swallowed R43: May cause sensitisation by contact	Acute tox 4 (oral) Skin sens. 1	H302 H317	≤0.1

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Chromium III compounds (as Cr)	24613-89-6	R45: May cause cancer R35: Causes severe burns R43: May cause sensitisation by skin contact	Carc. 1B Skin Corr. 1A Skin Sens. 1	H350 H314 H317	≤0.1
Copper oxide (Cu)	1317-38-0	-	-	-	≤0.1
Iron oxide (Fe)	1332-37-2	-	-	-	11.9 to 54.9
Potassium (K)	7440-09-7	R34: Causes burns	Skin Corr. 1B	H314	0.6 to 23.8
Lithium (Li)	7439-93-2	R34: Causes burns	Skin Corr. 1B	H314	0.1 to 0.8
Magnesium oxide (Mg)	1309-48-4	-	-	-	0.1 to 5.3
Manganese (Mn)	7439-96-5	-	-	-	0.7 to 8.2
Molybdenum (Mo)	7439-98-7	Molybdenum trioxide R36/37: Irritating to eyes and respiratory system R40: Limited evidence of carcinogenic effect	Molybdenum trioxide Carc. 2 Eye Irrit. 2 STOT SE 3	H351 H319 H335	≤0.1
Sodium (Na)	7440-23-5	R34: Causes burns	Skin Corr. 1B	H314	0.5 to 8.7

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Nickel (Ni)	7440-02-0	R40: Limited evidence of carcinogenic effect R43: May cause sensitisation by skin contact R48/23: Toxic danger of serious damage to health by prolonged exposure through inhalation R52/53: Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment	Carc. 2 Skin sens 1 STOT RE 1	H351 H317 H372	0.1 to 0.2
Lead (Pb)	7439-92-1	-	-	-	0.1 to 1.8
Silicon (Si)	7440-21-3	-	-	-	2.1 to 16.3
Titanium dioxide (Ti)	13463-67-7	-	-	-	0.1 to 3.2
Vanadium (V)	7440-62-2	-	-	-	≤0.1
Zinc (Zn)	7440-66-6	-	-	-	0.1 to 3.5
Fluoride (F-)	16984-48-8	-	-	-	0.1 to 21.4

Final fume classification		
Classification	H phrase	Text
Skin corrosion/irritation: Category 1B	H314	Causes severe skin burns and eye damage
Carcinogenicity: Category 1B	H350	May cause cancer

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The classification information above relates to the fume during use

Fume analysis: wt %

Al 0.1 to 1.2
Ca 0.1 to 11.6
Fe 11.9 to 54.9
K 0.6 to 23.8
Li 0.1 to 0.8
Mg 0.1 to 5.3
Na 0.5 to 8.7

Fume analysis: wt %

Ni 0.1 to 0.2
Pb 0.1 to 1.8
Si 2.1 to 16.3
Ti 0.1 to 3.2
Zn 0.1 to 3.5
F- 0.1 to 21.4

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Section 11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Conditions to avoid: none in the form supplied

When welding, fumes and gases generated can be dangerous to health.

Acute toxicology	Excessive exposures may affect human health, as follows: Aspiration may cause pulmonary oedema and pneumonitis Short-term overexposure can cause dizziness, nausea and irritation of the nose, throat or eyes.
Irritation	Not applicable
Corrosive effects	Not applicable
Sensitisation	May cause sensitisation by skin contact
Mutagenicity	Not applicable
Carcinogenicity	Welding fumes are possibly carcinogenic to humans
Repeated dose toxicity	Not applicable
Reproductive toxicity	Not applicable

Section 12. ECOLOGICAL INFORMATION

12.1 Toxicity

The welding process can effect the environment if fume is released directly into the atmosphere. Residues from welding consumables could degrade and accumulate into soils and ground water.

12.2 Persistence and degradability

Not applicable

12.3 Bio accumulative potential

Not available

12.4 Mobility in Soil

Not applicable

12.5 Results of PBT and vPvB assessment

Not applicable

12.6 Other adverse effects

Not applicable

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Section 13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Disposal considerations

Dispose of any product, residue or packing material according to national and local regulations. Spent ;fume extraction filters shall be disposed of as dangerous waste.

Other

Waste code

None

Section 14. TRANSPORT INFORMATION

14.1 UN number

Not applicable

14.2 UN proper shipping name

Not applicable

14.3 Transport hazard class(es)

Not applicable

14.4 Packing group

Not applicable

14.5 Environmental hazards

Not applicable

14.6 Special precautions for user

Not applicable

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

Not applicable

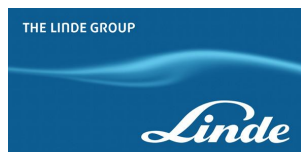
Other

Dangerous goods

No

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Section 15. REGULATORY INFORMATION

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

EU regulations

The product does not need to be labelled in accordance with EC directives or respective national laws.

National regulations

None

15.2 Chemical safety assessment

Not applicable

Section 16. OTHER INFORMATION

**References to key literature and
data sources**

Regulation (EC) No 1907/2006 of the European Parliament and of the Council, (REACH).

Regulation (EC) No 1272/2008 of the European Parliament and of the Council.

Annex VI CLP Regulation (EC) 1272/2008

Phrase meaning

H314 – Causes severe skin burns and eye damage

H350 – May cause cancer.

Other

Manufacturer's notes

Read this Safety Data Sheet carefully and become aware of hazards implied and the safety information.

End of document