# Safety data sheet
**according to 1907/2006/EC, Article 31**

*Printing date 19.04.2012* *Version number 1* *Revision: 19.04.2012*

## * 1 Identification of the substance/mixture and of the company/undertaking

· **SDS identifier** EU-1-3 (Rev. 1)
· **1.1 Product identifier** Electrode for Shielded Metal Arc Welding

· **Trade name: LB-52U**
· **1.2 Relevant identified uses of the substance or mixture and uses advised against**
· **Application of the substance / the preparation** Welding process.

· **1.3 Details of the supplier of the safety data sheet**
· **Manufacturer/Supplier:**
Manufacturer, outside the EU:
Kobe Steel, Ltd., Welding Business
100-1, Miyamae Fujisawa
251-8551 JAPAN

Representative in the EU:
Kobelco Welding of Europe BV
Eisterweg 8
6422 PN Heerlen
The Netherlands
Tel.: +31 45 5471111
Fax: +31 45 5471100
e-mail: info@kobelcowelding.nl

· **Further information obtainable from:** info@kobelcowelding.nl
· **1.4 Emergency telephone number:** Tel: +31 45 5471111(8:30-17:00, Mon.-Fri.)

## * 2 Hazards identification

· **2.1 Classification of the substance or mixture**
· **Classification according to Regulation (EC) No 1272/2008**
The product is not classified according to the CLP regulation.

· **Classification according to Directive 67/548/EEC or Directive 1999/45/EC** Not applicable
· **Information concerning particular hazards for human and environment:**
The product has to be labelled due to the calculation procedure of the "General Classification guideline for preparations of the EU" in the latest valid version.
· **Classification system:**
The classification is according to the latest editions of the EU-lists, and extended by company and literature data.

· **2.2 Label elements**
· **Labelling according to Regulation (EC) No 1272/2008** Not applicable
· **Hazard pictograms** Not applicable
· **Signal word** Not applicable
· **Hazard statements** Not applicable
· **2.3 Other hazards**
Avoid eye contact or inhalation of dust from the product.
Skin contact is normally not hazardous but should be avoided to prevent possible allergic reaction.
When this product is used in a welding process the most significant hazards are electric shock, fumes, gases, radiation, spatter, slag and heat.
Shock: Electric shock can kill.
Fumes: Overexposure to welding fumes may result in symptoms like dizziness, nausea, dryness or irritation of the nose, throat or eyes. Chronic overexposure to welding fumes may affect pulmonary function.
Gases: Gases may cause gas poisoning.
Radiation: Arc rays can severely damage eyes or skin.
Spatter, slag and heat: Spatter and slag can damage eyes. Spatter, slag, melting metal, arc rays and hot welds can cause burn injuries and start fires.
· **Results of PBT and vPvB assessment**
· **PBT:**
Does not meet the specific criteria detailed in Annex XIII of Regulation 1907/2006 and the substances is not considered as a PBT.

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· ***vPvB:***
*Does not meet the specific criteria detailed in Annex XIII of Regulation 1907/2006 and the substances is not considered as a vPvB.*

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## 3 Composition/information on ingredients

· ***3.2 Chemical characterization: Mixtures***
· ***Description:*** *Mixture of substances listed below with nonhazardous additions.*

| · ***Dangerous components:*** | | | |
|---|---|---|---|
| *CAS: 7789-75-5*<br>*EINECS: 232-188-7* | *calcium fluoride* | *substance with a Community workplace exposure limit* | *≤ 5%* |
| *CAS: 13463-67-7*<br>*EINECS: 236-675-5* | *titanium dioxide* | *substance with a Community workplace exposure limit* | *≤ 5%* |
| *CAS: 7440-21-3*<br>*EINECS: 231-130-8* | *silicon* | *substance with a Community workplace exposure limit*<br>*Flam. Sol. 2, H228* | *≤ 3%* |
| *CAS: 7439-96-5*<br>*EINECS: 231-105-1* | *manganese* | *Xn R48* | *≤ 3%* |
| *CAS: 1344-28-1*<br>*EINECS: 215-691-6* | *aluminium oxide* | *substance with a Community workplace exposure limit* | *≤ 1%* |

· ***Additional information:*** *For the wording of the listed risk phrases refer to section 16.*

## 4 First aid measures

· ***4.1 Description of first aid measures***
· ***After inhalation:*** *Supply fresh air; consult doctor in case of complaints.*
· ***After skin contact:*** *Generally the product does not irritate the skin.*
· ***After eye contact:*** *Rinse opened eye for several minutes under running water.*
· ***After swallowing:*** *If symptoms persist consult doctor.*
· ***Electrical Shock:***
*Disconnect and turn off power. If the victim is semi- or unconscious, open the airway. If the victim cannot breath, give artificial respiration. If there is no pulse, massage the chest and apply artificial respiration.*
· ***4.2 Most important symptoms and effects, both acute and delayed*** *No further relevant information available.*
· ***4.3 Indication of any immediate medical attention and special treatment needed***
*No further relevant information available.*

## 5 Firefighting measures

· ***5.1 Extinguishing media***
· ***Suitable extinguishing agents:***
*CO2, powder or water spray. Fight larger fires with water spray or alcohol resistant foam.*
· ***5.2 Special hazards arising from the substance or mixture*** *No further relevant information available.*
· ***5.3 Advice for firefighters***
· ***Protective equipment:*** *Standard protective clothing for firefighters.*

## 6 Accidental release measures

· ***6.1 Personal precautions, protective equipment and emergency procedures*** *Not required.*
· ***6.2 Environmental precautions:*** *Do not allow to enter sewers/ surface or ground water.*
· ***6.3 Methods and material for containment and cleaning up:*** *Pick up mechanically.*
· ***6.4 Reference to other sections***
*See Section 7 for information on safe handling.*
*See Section 8 for information on personal protection equipment.*
*See Section 13 for disposal information.*

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## 7 Handling and storage

· **7.1 Precautions for safe handling** No special precautions are necessary if used correctly.
· **Information about fire - and explosion protection:** No special measures required.

· **7.2 Conditions for safe storage, including any incompatibilities**
· **Storage:**
· **Requirements to be met by storerooms and receptacles:** No special requirements.
· **Information about storage in one common storage facility:**
Inner cover: Plastic bag
Outer cover: Cardboard box
· **Further information about storage conditions:**
Store welding consumables inside a room without humidity. Do not store welding consumables directly on the ground or beside a wall. Keep welding consumables away from chemical substances like acids which could cause chemical reactions.
· **7.3 Specific end use(s)** Welding process.

## * 8 Exposure controls/personal protection

· **Additional information about design of technical facilities:** No further data; see item 7.

· **8.1 Control parameters**

| · **Ingredients with limit values that require monitoring at the workplace:** | |
|---|---|
| **7789-75-5 calcium fluoride** | |
| WEL | Long-term value: 2.5 mg/m³<br>as F |
| **13463-67-7 titanium dioxide** | |
| WEL | Long-term value: 10* 4** mg/m³<br>*total inhalable **respirable |
| **7440-21-3 silicon** | |
| WEL | Long-term value: 10* 4** mg/m³<br>*inhalable dust **respirable dust |
| **1344-28-1 aluminium oxide** | |
| WEL | Long-term value: 10* 4** mg/m³<br>*inhalable dust **respirable dust |

· **Additional information:** The lists valid during the making were used as basis.

· **8.2 Exposure controls**
· **Personal protective equipment:**
· **General protective and hygienic measures:** Wash hands before breaks and at the end of work.
· **Respiratory protection:**
Use respirable fume respirator or air supplied respirator when welding in confined space or where local exhaust or ventilation does not keep exposure below TLV. Keep head out of the fumes and gases.
· **Protection of hands:**
The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.
Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture.
Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation.
· **Material of gloves**
The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.
· **Penetration time of glove material**
The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

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· ***Eye protection:***
*Wear helmet or use face shield with filter lens. As a rule of thumb, start with a shade which is too dark to see the weld zone. Then go to the next lighter shade which gives sufficient view of the weld zone. Provide protective screens and flash goggles, if necessary, to shield others.*
· ***Body protection:***
· ***Protective clothing:***
*Wear head, hand, and body protection which help to prevent injury from radiation, sparks and electric shock. At a minimum, this includes welder's gloves and a protective face shield and may include arm protectors, aprons, hats, shoulder protection, as well as dark substantial clothing. Train the welder not to touch live electrical parts and to insulate himself from work and ground.*
· ***Ear protection:***
*Wear earplugs or earmuffs when using engine driven arc welding machine or pulsed arc welding machine that generates high-level noise.*
· ***Ventilation:***
*Use enough ventilation, local exhaust at the arc, or both, to keep the fumes and gases below the TLVs in the worker's breathing zone and the general area. Use extra ventilation when welding galvanized plate or coated plate.*

## * 9 Physical and chemical properties

| | |
|---|---|
| · ***9.1 Information on basic physical and chemical properties*** | |
| · ***General Information*** | |
| · ***Appearance:*** | |
| ***Form:*** | *Solid material*<br>*Rod* |
| ***Colour:*** | *Grey* |
| · ***Odour:*** | *Odourless* |
| · ***Odour threshold:*** | *Not determined.* |
| · ***pH-value:*** | *Not applicable.* |
| · ***Change in condition*** | |
| ***Melting point/Melting range:*** | *Undetermined.* |
| ***Boiling point/Boiling range:*** | *Undetermined.* |
| · ***Flash point:*** | *Not applicable.* |
| · ***Flammability (solid, gaseous):*** | *Not determined.* |
| · ***Ignition temperature:*** | |
| ***Decomposition temperature:*** | *Not determined.* |
| · ***Self-igniting:*** | *Product is not self-igniting.* |
| · ***Danger of explosion:*** | *Product does not present an explosion hazard.* |
| · ***Explosion limits:*** | |
| ***Lower:*** | *Not determined.* |
| ***Upper:*** | *Not determined.* |
| · ***Vapour pressure:*** | *Not applicable.* |
| · ***Density:*** | *Not determined.* |
| · ***Relative density*** | *Not determined.* |
| · ***Vapour density*** | *Not applicable.* |
| · ***Evaporation rate*** | *Not applicable.* |
| · ***Solubility in / Miscibility with water:*** | *Insoluble.* |
| · ***Segregation coefficient (n-octanol/water):*** | *Not determined.* |

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| | |
|---|---|
| · ***Viscosity:*** | |
| ***Dynamic:*** | *Not applicable.* |
| ***Kinematic:*** | *Not applicable.* |
| · ***Solvent content:*** | |
| ***Organic solvents:*** | *0.0 %* |
| ***VOC (EC)*** | *0.00 %* |
| · ***9.2 Other information*** | *No further relevant information available.* |

## * *10 Stability and reactivity*

· ***10.1 Reactivity*** *Contact with chemical substances like acids could cause generation of gas.*
· ***10.2 Chemical stability***
· ***Thermal decomposition / conditions to be avoided:*** *No decomposition if used according to specifications.*
· ***10.3 Possibility of hazardous reactions*** *Reacts with acids, alkalis and oxidizing agents.*
· ***10.4 Conditions to avoid*** *No further relevant information available.*
· ***10.5 Incompatible materials:*** *Avoid contact with: strong acids, alkalis and oxidizing agents.*
· ***10.6 Hazardous decomposition products:***
*Hazardous decomposition products includes those from the volatilization, reaction or oxidation of the materials listed in section 2 and those from the base metal and coating.*
*Manganese has low exposure limit, in some countries, that may be easily exceeded.*
*Reasonably expected gaseous products would include carbon oxides, nitrogen oxides and ozone.*
*Reasonably expected fume constituents of this product would include oxides of metals as:*
*Fume analysis (wt%):*
*Fe: < 70 Mn: < 15 F: < 7.0*
*Cr: - Ni: < 3.0 Pb: -*

## * *11 Toxicological information*

· ***11.1 Information on toxicological effects***
*Inhalation of welding fumes and gases can be dangerous to your health. The composition and quantity of both are dependent upon the material being worked, the process, procedures, and consumables used.*
· ***Acute toxicity:***
· ***Available data:***
*Overexposure to the gases, fumes and dusts may include irritation of the eyes, lungs, nose and throat.*
*Some toxic gases associated with welding may cause pulmonary edema, asphyxiation, and death.*
*Acute overexposure may include signs and symptoms such as watery eyes, nose and throat irritation, headache, dizziness, difficulty in breathing, frequent coughing, or chest pain.*
*Exposure to the fluoride ion may cause hypocalcaemia-calcium deficiency in the blood that can result in muscle cramps and inflammation and necrosis of mucous membranes.*
· ***Primary irritant effect:***
· ***on the skin:*** *No irritant effect.*
· ***on the eye:*** *No irritating effect.*
· ***Sensitization:*** *No sensitizing effects known.*
· ***Subacute to chronic toxicity:***
*Overexposure to air contaminants may lead to their accumulation in the lungs, a condition which may be seen as dense areas on chest X-rays.*
*The severity of the change is proportional to the length of the exposure.*
*The changes may be caused by non-work factors such as smoking, etc.*
*Long term exposure to welding and allied processes gasses, dusts and fumes may contribute to pulmonary irritation or pneumoconiosis.*
*Overexposure to manganese compounds may affect the central nervous system, symptoms of which are languor, sleepiness, muscular weakness, emotional disturbances and spastic gait. The effect of manganese on the nervous system is irreversible.*

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*Overexposure to copper fumes may lead to copper poisoning, resulting in hermolytic anemia and liver, kidney and spleen damage.*
*Inhalation of too much iron oxide fume over a long time can cause siderosis, sometimes called "iron pigmentation" of the lung, which can be seen on a chest x-ray but causes little or no disability. Chronic overexposure to iron (>50-100mg Fe per day) can result in pathological deposition of iron in body tissues, symptoms of which are fibrosis of the pancreas, diabetes mellitus, and liver cirrhosis.*
*Long term inhalatory exposure to crystalline silica above current occupational exposure limits may lead to silicosis (development of fibrotic nodules in lung tissue) and is also associated with a number of other diseases (bronchitis, emphysema, etc.). Smoking may increase the risk on adverse effects.*
*Chronic fluoride absorption can result in osseous fluor sis, increased radiographic density of the bones and mottling of the teeth.*

· **Additional toxicological information:**
*The product shows the following dangers according to the calculation method of the General EU Classification Guidelines for Preparations as issued in the latest version:*
*Irritant*
*Harmful*

· **CMR effects (carcinogenity, mutagenicity and toxicity for reproduction)**
*Crystalline silica is classified as a human carcinogen (Group I) by the IARC (International Agency for Research on Cancer).*
*Welding fumes (not otherwise specified) are possibly carcinogenic to humans.*

## * 12 Ecological information

· **12.1 Toxicity**
· **Aquatic toxicity:** No further relevant information available.
· **12.2 Persistence and degradability** No further relevant information available.
· **12.3 Bioaccumulative potential** No further relevant information available.
· **12.4 Mobility in soil** Not mobile.
· **Additional ecological information:**
· **General notes:**
*Water hazard class 2 (German Regulation) (Self-assessment): hazardous for water*
*Do not allow product to reach ground water, water course or sewage system.*
*Danger to drinking water if even small quantities leak into the ground.*
· **12.5 Results of PBT and vPvB assessment**
· **PBT:**
*Does not meet the specific criteria detailed in Annex XIII of Regulation 1907/2006 and the substances is not considered as a PBT.*
· **vPvB:**
*Does not meet the specific criteria detailed in Annex XIII of Regulation 1907/2006 and the substances is not considered as a vPvB.*
· **12.6 Other adverse effects** No further relevant information available.

## 13 Disposal considerations

· **13.1 Waste treatment methods**
· **Recommendation**
*Must not be disposed together with household garbage. Do not allow product to reach sewage system.*

· **Uncleaned packaging:**
· **Recommendation:** Disposal must be made according to official regulations.

## 14 Transport information

· **14.1 UN-Number**
· **ADR, ADN, IMDG, IATA** Not applicable

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| | |
|---|---|
| · **14.2 UN proper shipping name** | |
| · **ADR, ADN, IMDG, IATA** | Not applicable |
| · **14.3 Transport hazard class(es)** | |
| · **ADR, ADN, IMDG, IATA** | |
| · **Class** | Not applicable |
| · **14.4 Packing group** | |
| · **ADR, IMDG, IATA** | Not applicable |
| · **14.5 Environmental hazards:** | |
| · **Marine pollutant:** | No |
| · **14.6 Special precautions for user** | Not applicable. |
| · **14.7 Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code** | Not applicable. |
| · **UN "Model Regulation":** | - |

## * 15 Regulatory information

· **15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**
Warning text on label:
WARNING: PROTECT yourself and others. Read and understand this information.
FUMES AND GASES can be hazardous to your health.
ARC RAYS can injure eyes and burn skin.
ELECTRIC SHOCK can KILL.
· Before use, read and understand the manufacturer's instructions, Material Safety Data Sheets (MSDSs), and your employer's safety practices.
· Keep your head out of the fumes.
· Use adequate ventilation, exhaust at the arc, or both, to keep fumes and gases from your breathing zone and the general area.
· Wear correct eye, ear, and body protection.
· Do not touch free electrical parts.
· **15.2 Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

## 16 Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

· **Relevant phrases**
H228 Flammable solid.
R48 Danger of serious damage to health by prolonged exposure.
· **Abbreviations and acronyms:**
ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)
IMDG: International Maritime Code for Dangerous Goods
IATA: International Air Transport Association
ICAO: International Civil Aviation Organization
GHS: Globally Harmonized System of Classification and Labelling of Chemicals
VOC: Volatile Organic Compounds (USA, EU)
· *** Data compared to the previous version altered.**