Material Safety Data Sheet
According to 91/155 EEC

Reviewed on 04/12/11

1 Identification of the substance/preparation and of the company/undertaking

· **Product details**

· **Trade name: UTP 48**
· **Application of the substance / the preparation** electrodes for welding

· **Manufacturer/Supplier:**
Boehler Welding Group Canada Ltd.

1555 Bonhill Road, Unit 11
MISSISSAUGA, ONTARIO L5T 1Y5
CANADA

phone 1 905 564 0589
fax: 1 905 564 2027

· **Further information obtainable from:** QS department

2 Composition/information on ingredients

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

· **Dangerous components:**

7429-90-5	aluminium powder (pyrophoric)	50-100%
7440-21-3	silicon	10-25%

3 Hazards identification

· **Hazard description:**
Welding electrodes and wires are non-hazardous solids at ambient temperature.
Arc rays can injure eyes and burn skin. Electric shock can kill. Before use, read and understand the manufacturer's instructions, MSDS's and your employer's safety practices. Keep your head out of the fumes. Use enough 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 live electrical parts. See American National Standard Z49.1, and OSHA Safety and Health Standards.
Carcinogenicity
Crystalline silica: The National Toxicology Program indicates there is sufficient evidence for the carcinogenicity or respirable crystalline silica in experimental animals. Increases in incidence of lung cancers have been found in inhalation studies in rats. An IARC working group reported there is limited evidence for the carcinogenicity of crystalline silica in humans.
· **Information concerning particular hazards for human and environment:** Not applicable.

4 First-aid measures

· **General information:** Seek medical treatment.
· **After inhalation:** Supply fresh air; consult doctor in case of complaints.
· **After skin contact:** Immediately wash with water and soap and rinse thoroughly.
· **After eye contact:** Rinse opened eye for several minutes under running water.

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· **After swallowing:** Seek medical treatment.

5 Fire-fighting measures

· **Suitable extinguishing agents:** Use fire extinguishing methods suitable to surrounding conditions.
· **Protective equipment:** No special measures required.

6 Accidental release measures

· **Person-related safety precautions:** Not required.
· **Measures for environmental protection:** Do not allow to enter sewers/ surface or ground water.
· **Measures for cleaning/collecting:** Pick up mechanically.
· **Additional information:** No dangerous substances are released.

7 Handling and storage

· **Handling:**
· **Information for safe handling:** Prevent formation of dust.
· **Information about fire - and explosion protection:** No special measures required.

· **Storage:**
· **Requirements to be met by storerooms and receptacles:** No special requirements.
· **Information about storage in one common storage facility:** Not required.
· **Further information about storage conditions:** None.

8 Exposure controls/personal protection

· **Additional information about design of technical facilities:**
Ventilation: Use enough ventilation, local exhaust at the arc, or both, to keep the fumes and gases from the worker's breathing zone and the general area. Train the welder to keep his head out of the fumes. Keep exposures as low as possible
Respiratory Protection: Use respirable fumes respirator or air supplied respirator when welding in confined space or where local exhaust or ventilation does not keep exposure below the recommended exposure limit.

· **Ingredients with limit values that require monitoring at the workplace:**	
7429-90-5 aluminium powder (pyrophoric)	
PEL (USA)	15*; 5** mg/m³ *Total dust **Respirable fraction
REL (USA)	10*; 5** mg/m³ Metal dust; *Total dust **Respirable fraction
TLV (USA)	10 mg/m³ Metal dust

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7440-21-3 silicon	
PEL (USA)	15*; 5** mg/m³ *Total dust **Respirable fraction
REL (USA)	10*; 5** mg/m³ *Total dust **Respirable fraction
TLV (USA)	10 mg/m³

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

· **Personal protective equipment:**
· **General protective and hygienic measures:** Wash hands before breaks and at the end of work.
· **Respiratory protection:** Use suitable respiratory protective device in case of insufficient ventilation.
· **Protection of hands:** Heat protection gloves
· **Material of gloves** Leather gloves
· **Eye protection:**
Wear helmet or use face shield with filter lens. Provide protective screens and flash goggles, if necessary, to shield others. As a rule of thumb, start with a shade that is too dark to see the weld zone. Then go the next lighter shade which gives sufficient view of the weld zone.
· **Body protection:** Protective work clothing

9 Physical and chemical properties

· **General Information**	
Form:	Solid
Colour:	Whitish
Odour:	Odourless
· **Change in condition**	
Melting point/Melting range:	Undetermined.
Boiling point/Boiling range:	Undetermined.
· **Flash point:**	Not applicable.
· **Self-igniting:**	Product is not selfigniting.
· **Danger of explosion:**	Product does not present an explosion hazard.
· **Density at 20°C:**	2.683 g/cm³
· **Solubility in / Miscibility with water:**	Insoluble.

10 Stability and reactivity

· **Thermal decomposition / conditions to be avoided:**
No decomposition if used according to specifications.
· **Dangerous reactions** No dangerous reactions known.

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· **Dangerous decomposition products:**
Welding fumes and gases cannot be classified simply. The composition and quantity of both are dependent upon the metal being welded, and the process, procedures, and electrodes used. Other conditions which also influence the composition and quantity of the fumes and gases to which workers may be exposed include: coatings on the metal being welded (such as paint, plating, galvanising, or phosphate coatings on steels which would produce phosphine gas), the number of welders and the volume of the work area, the quality and amount of ventilation, the position of the welder's head with respect to the fume plume as well as the presence of contaminants in the atmosphere (such as chlorinated hydrocarbon vapours from cleaning and degreasing activities which may be decomposed by the arc into toxic gases such as phosgene).
When the electrode is consumed, the fume and gas decomposition products generated are different in percent and form from the ingredients listed in SECTION II. Fume and gas decomposition products, and not the ingredients in the electrode are important. The concentration of a given fume or gas component may decrease or increase by many times the original concentration in the electrode. Also, new compounds not in the electrodes may form. Decomposition products of normal operation include those originating from the volatilization, reaction, or oxidation of the materials shown in SECTION II, plus those from the base metal and coating, etc..., as noted above. Reasonably expected fume constituents of this product would include: Example for Carbon dioxide shielded flux-cored electrode (AWS 5.20 E70-T-1): Reasonably expected fume constituents of this product would include: primarily oxides of Iron; secondarily complex oxides of Manganese, Silicon, Titanium and Sodium. The present ACGIH TLV for Manganese, 0.2 mg/m3 will result in a significant reduction from the 5 mg/m3 general welding fume (NOC) level. Example for Stainless Steel covered electrodes (AWS 5.4): Reasonably expected fume constituents of this product would include: primarily fluorides and complex oxides of Iron and Silicon, secondarily complex oxides of Manganese, titanium, chromium, nickel, sodium and potassium.
The present 1995 OSHA PEL (Permissible Exposure Limit) for hexavalent Chromium (Cr +6) is 0.05 mg/m3 which will result in a significant reduction from the 5 mg/m3 general welding fume (NOC) level. The limit of 0.05 mg/m3 for hexavalent chromium from the decomposition products in these electrodes comes from the limit shown at the bottom of OSHA Table Z-2, which is for 0.1 mg of CrO3- which calculates to 0.05 mg of Cr+6/m3. It applies to soluble chromates of the types found in covered stainless electrode fumes. Reasonably expected gaseous constituents would include Carbon monoxide and Carbon dioxide. Ozone and nitrogen oxides may be formed by the radiation from the arc. One recommended way to determine the composition and quantity of fumes and gases to which workers are exposed is to take an air sample from inside the welder's helmet if worn or in the worker's breathing zone. See ANSI/AWS F1.1 and ANSI/AWS F1.2-1992

11 Toxicological information

· **Acute toxicity:**
· **Primary irritant effect:**
· **on the skin:** *No irritant effect.*
· **on the eye:** *No irritating effect.*
· **Sensitization:** *No sensitizing effects known.*
· **Additional toxicological information:**
When used and handled according to specifications, the product does not have any harmful effects to our experience and the information provided to us.

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12 Ecological information

· **General notes:**
Water hazard class 1 (German Regulation) (Self-assessment): slightly hazardous for water
Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.

13 Disposal considerations

· **Product:**
· **Recommendation** Must be specially treated adhering to official regulations.

· **European waste catalogue**	
12 01 13	welding wastes

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

14 Transport information

· **Land transport ADR/RID (cross-border)**
· **ADR/RID class:** -

· **Maritime transport IMDG:**
· **IMDG Class:** -
· **Marine pollutant:** No

· **Air transport ICAO-TI and IATA-DGR:**
· **ICAO/IATA Class:** -

· **Transport/Additional information:** Not dangerous according to the above specifications.

15 Regulatory information

· **Labelling according to EU guidelines:**
The product is not subject to identification regulations under EU Directives and the Ordinance on Hazardous Materials (German GefStoffV).

· **National regulations:**

· **Waterhazard class:** Water hazard class 1 (Self-assessment): slightly hazardous for water.

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.

· **Department issuing MSDS:** QS department
· **Contact:**
phone +1- 905-564-0589