

Material Safety Data Sheet

acc. to ISO/DIS 11014

Printing date 11/20/2006

Reviewed on 11/17/2006

1 Identification of substance

- **Product details**
- **Trade name:** UTP 306 M
- **Application of the substance / the preparation**
Flux
Hard solder
- **Manufacturer/Supplier:**
Boehler Thyssen Welding USA Inc.





- PO Box 721678
HOUSTON, Texas 77272-1678

- phone 281 499 1212
fax 281 261 7895
- **Information department:** QS department

2 Composition/Data on components

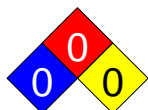
- **Chemical characterization**
- **Description:** Mixture of the substances listed below with nonhazardous additions.

- **Dangerous components:**

7440-22-4	silver		25-50%
7440-66-6	zinc powder -zinc dust (pyrophoric)	 F,  N; R 15-17-50/53	10-25%
7440-50-8	copper		10-25%
14075-53-7	potassium tetrafluoroborate	 Xn,  Xi; R 22-36/38	10-25%
7440-31-5	tin		≤ 2.5%

3 Hazards identification

- **Hazard description:**
General: Different kinds of fume and dust occur during the welding and grinding process. Chromium-VI compounds and nickel oxides might occur, which are classified as carcinogenic. In addition irritant substances such as fluorides and manganese oxides as well as fine dusts (mostly iron oxides) occur. Health Hazards (acute and chronic) Welding electrodes and wires are non-hazardous solids at ambient temperature.
- **Information pertaining to particular dangers for man 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 was made according to the latest editions of international substances lists, and expanded upon from company and literature data.
- **NFPA ratings (scale 0 - 4)**



Health = 0
Fire = 0
Reactivity = 0

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· **HMIS-ratings (scale 0 - 4)**

HEALTH	0	Health = 0
FIRE	0	Fire = 0
REACTIVITY	0	Reactivity = 0

4 First aid measures

- **General information:** No special measures required.
- **After inhalation:** Supply fresh air; consult doctor in case of complaints.
- **After skin contact:** Rinse with warm water.
- **After eye contact:** Rinse opened eye for several minutes under running water. Then consult a doctor.
- **After swallowing:** Call a doctor immediately.

5 Fire fighting measures

- **Suitable extinguishing agents:** Use fire fighting measures that suit the environment.
- **Special hazards caused by the material, its products of combustion or resulting gases:**
Formation of toxic gases is possible during heating or in case of fire.
- **Protective equipment:** Wear self-contained respiratory protective device.
- **Additional information**
Dispose of fire debris and contaminated fire fighting water in accordance with official regulations.

6 Accidental release measures

- **Person-related safety precautions:** Wear protective clothing.
- **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:** Ensure good ventilation/exhaustion at the workplace.
- **Information about protection against explosions and fires:** No special measures required.
- **Storage:**
- **Requirements to be met by storerooms and receptacles:** No special requirements.
- **Information about storage in one common storage facility:** Do not store together with acids.
- **Further information about storage conditions:** Store in dry conditions.

USA

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8 Exposure controls and personal protection

· **Additional information about design of technical systems:**

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.

· **Components with limit values that require monitoring at the workplace:**

7440-22-4 silver

PEL	0.01 mg/m ³
REL	0.01 mg/m ³
TLV	0.1 mg/m ³

7440-50-8 copper

PEL	0.1*;1** mg/m ³ *fume **dusts & mists
REL	0.1*;1** mg/m ³ *Copper fume, as Cu **Copper dusts & mists, as Cu
TLV	0.2*, 1** mg/m ³ *fume; ** dusts&mists, as Cu

14075-53-7 potassium tetrafluoroborate

PEL	2.5 mg/m ³ as F
REL	2.5 mg/m ³ as F
TLV	2.5,A4 mg/m ³ as F; (q)

7440-31-5 tin

PEL	2 mg/m ³ Metal
REL	2 mg/m ³ Tin, Metal
TLV	2 mg/m ³

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

· **Personal protective equipment:**

· **General protective and hygienic measures:**

Do not eat, drink, smoke or sniff while working.

Wash hands before breaks and at the end of work.

· **Breathing equipment:**

Filter P2

Use suitable respiratory protective device in case of insufficient ventilation.

· **Protection of hands:**

Protective gloves

Heat protection gloves

· **Material of gloves** *Leather gloves*

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· 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
Color:	Different according to coloring
Odor:	Odorless

· Change in condition

Boiling point/Boiling range: Undetermined.

· Flash point: Not applicable.

· Auto igniting: Product is not selfigniting.

· Danger of explosion: Product does not present an explosion hazard.

· Density at 20°C (68°F): 9.4 g/cm³

· Solubility in / Miscibility with

Water: Partly soluble.

10 Stability and reactivity

· Thermal decomposition / conditions to be avoided:

No decomposition if used and stored according to specifications.

Stable at ambient temperature.

· Dangerous reactions Reacts with strong acids.

· Dangerous products of decomposition:

Possible in traces.

Hydrogen fluoride

Toxic metal compounds

Toxic metal oxide smoke

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

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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:**

· **LD/LC50 values that are relevant for classification:**

7440-66-6 zinc powder -zinc dust (pyrophoric)

Oral	LD50	388 mg/kg (duck)
		>5000 mg/kg (rat)
14075-53-7 potassium tetrafluoroborate		
	Intravenous LD50	22.8 mg/kg (mouse)

· **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 according to our experience and the information provided to us.

12 Ecological information

· **General notes:**

Water hazard class 1 (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.

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13 Disposal considerations

- **Product:**
- **Recommendation:**
Must not be disposed of together with household garbage. Do not allow product to reach sewage system.
- **Uncleaned packagings:**
- **Recommendation:** Disposal must be made according to official regulations.

14 Transport information

- **DOT regulations:**
- **Hazard class:** -
- **Land transport ADR/RID (cross-border):**
- **ADR/RID class:** -
- **Maritime transport IMDG:**
- **IMDG Class:** -
- **Air transport ICAO-TI and IATA-DGR:**
- **ICAO/IATA Class:** -

15 Regulations

- **Sara**

- **Section 355 (extremely hazardous substances):**

None of the ingredient is listed.

- **Section 313 (Specific toxic chemical listings):**

7440-22-4 silver

7440-66-6 zinc powder -zinc dust (pyrophoric)

7440-50-8 copper

- **TSCA (Toxic Substances Control Act):**

All ingredients are listed.

- **Proposition 65**

- **Chemicals known to cause cancer:**

None of the ingredients is listed.

- **Chemicals known to cause reproductive toxicity for females:**

None of the ingredients is listed.

- **Chemicals known to cause reproductive toxicity for males:**

None of the ingredients is listed.

- **Chemicals known to cause developmental toxicity:**

None of the ingredients is listed.

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· **Cancerogenity categories**

· **EPA (Environmental Protection Agency)**

7440-22-4	silver	D
7440-50-8	copper	D

· **IARC (International Agency for Research on Cancer)**

None of the ingredients is listed.

· **NTP (National Toxicology Program)**

None of the ingredients is listed.

· **TLV (Threshold Limit Value established by ACGIH)**

None of the ingredients is listed.

· **MAK (German Maximum Workplace Concentration)**

None of the ingredients is listed.

· **NIOSH-Ca (National Institute for Occupational Safety and Health)**

None of the ingredients is listed.

· **OSHA-Ca (Occupational Safety & Health Administration)**

None of the ingredients is listed.

· **Product related hazard informations:**

Observe the general safety regulations when handling chemicals.

Although this product is not subject to identification regulations, we recommend that the safety suggestions are observed.

· **National regulations:**

· **Water hazard 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:**

Ms. Monica Isenhardt
phone +1-281-499 1212

· * **Data compared to the previous version altered.**