

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 57 PA
- **Application of the substance / the preparation**
 Brazing alloy
 Soldering flux
- **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:**

7439-92-1	lead	 T; R 61-62-20/22-33	25-50%
7440-31-5	tin		25-50%
7646-85-7	zinc chloride	 C,  Xn,  N; R 22-34-50/53	10-25%
12125-02-9	ammonium chloride	 Xn,  Xi; R 22-36	≤ 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.



C Corrosive
 N Dangerous for the environment

- **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.

R 33 Danger of cumulative effects.

R 34 Causes burns.

R 51/53 Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment

Warning. Contains lead.

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· **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)**



· **HMIS-ratings (scale 0 - 4)**



4 First aid measures

- **General information:** Immediately remove any clothing soiled by the product.
- **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. Then consult a doctor.
- **After swallowing:** Drink copious amounts of water and provide fresh air. Immediately call a doctor.

5 Fire fighting measures

- **Suitable extinguishing agents:**
CO₂, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
- **For safety reasons unsuitable extinguishing agents:** Water with full jet
- **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 equipment. Keep unprotected persons away.
- **Measures for environmental protection:** Do not allow to enter sewers/ surface or ground water.
- **Measures for cleaning/collecting:**
Pick up mechanically.
Send for recovery or disposal in suitable receptacles.
Clean the affected area carefully; suitable cleaners are:
Warm water

7 Handling and storage

- **Handling:**
- **Information for safe handling:**
Store in cool, dry place in tightly closed receptacles.

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Ensure good ventilation/exhaustion at the workplace.

Prevent formation of dust.

· **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:** Store away from foodstuffs.

· **Further information about storage conditions:** Keep receptacle tightly sealed.

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:**

7439-92-1 lead

PEL 0.05* mg/m³

as Pb

REL <0.1* mg/m³

as Pb; *Blood Pb <0.06 mg/100 g whole blood

TLV 0.05 mg/m³

as Pb; BEI

7440-31-5 tin

PEL 2 mg/m³

Metal

REL 2 mg/m³

Tin, Metal

TLV 2 mg/m³

7646-85-7 zinc chloride

PEL 1 mg/m³

REL Short-term value: 2 mg/m³

Long-term value: 1 mg/m³

TLV Short-term value: 2 mg/m³

Long-term value: 1 mg/m³

fume

12125-02-9 ammonium chloride

REL Short-term value: 20 mg/m³

Long-term value: 10 mg/m³

TLV Short-term value: 20 mg/m³

Long-term value: 10 mg/m³

· **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.

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- Keep away from foodstuffs, beverages and feed.
 Immediately remove all soiled and contaminated clothing.
 Wash hands before breaks and at the end of work.
 Avoid contact with the eyes and skin.
- **Breathing equipment:** Use suitable respiratory protective device in case of insufficient ventilation.
 - **Protection of hands:**
 Protective gloves
 Heat protection gloves
 - **Material of gloves**
 Rubber gloves
 Leather gloves
 - **Eye protection:**



Tightly sealed goggles

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:	Pasty
Color:	Dark grey
Odor:	Odorless

· Change in condition

Melting point/Melting range: 183-235°C (361-455°F)
Boiling point/Boiling range: >100°C (>212°F)

- | | |
|--|---|
| · 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): | 3.2 g/cm ³ |
| · Solubility in / Miscibility with Water: | Partly miscible. |
| · Viscosity: | |
| Dynamic at 20°C (68°F): | 12000 mPas |

10 Stability and reactivity

- **Thermal decomposition / conditions to be avoided:**
 No decomposition if used and stored according to specifications.

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· **Dangerous reactions** Reacts with strong acids.

· **Dangerous products of decomposition:**

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:**

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

7439-92-1 lead

Intraperitoneal LD50	1 mg/kg (rat)
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7646-85-7 zinc chloride

Oral	LD50	350 mg/kg (rat)
Inhalative	inhalation LC50	1960 mg/m ³ /10 (rat)

· **Primary irritant effect:**

· **on the skin:** Caustic effect on skin and mucous membranes.

· **on the eye:** Strong caustic effect.

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- **Sensitization:** No sensitizing effects known.
- **Additional toxicological information:**
The product shows the following dangers according to internally approved calculation methods for preparations:
Corrosive
Swallowing will lead to a strong caustic effect on mouth and throat and to the danger of perforation of esophagus and stomach.

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.
Must not reach bodies of water or drainage ditch undiluted or unneutralized.

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:** 8
- **Identification number:** UN1759
- **Packing group:** III
- **Proper shipping name (technical name):** CORROSIVE SOLID, N.O.S. (ZINC CHLORIDE)
- **Label:** 8

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



- **ADR/RID class:** 8 Corrosive substances
- **Danger code (Kemler):** 80
- **UN-Number:** 1759

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· **Packaging group:** III
 · **Description of goods:** 1759 CORROSIVE SOLID, N.O.S. (ZINC CHLORIDE)

· **Maritime transport IMDG:**



· **IMDG Class:** 8
 · **UN Number:** 1759
 · **Label:** 8
 · **Packaging group:** III
 · **EMS Number:** F-A,S-B
 · **Marine pollutant:** No
 · **Propper shipping name:** CORROSIVE SOLID, N.O.S. (ZINC CHLORIDE)

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



· **ICAO/IATA Class:** 8
 · **UN/ID Number:** 1759
 · **Label:** 8
 · **Packaging group:** III
 · **Propper shipping name:** CORROSIVE SOLID, N.O.S. (ZINC CHLORIDE)

15 Regulations

· **Sara**

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

None of the ingredient is listed.

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

7439-92-1 | lead

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

All ingredients are listed.

· **Proposition 65**

· **Chemicals known to cause cancer:**

7439-92-1 | lead

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

7439-92-1 | lead

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

7439-92-1 | lead

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· Chemicals known to cause developmental toxicity:

7439-92-1	lead
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· Cancerogenity categories

· EPA (Environmental Protection Agency)

7439-92-1	lead	B2
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7646-85-7	zinc chloride	D
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· IARC (International Agency for Research on Cancer)

7439-92-1	lead	2B
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· NTP (National Toxicology Program)

None of the ingredients is listed.

· TLV (Threshold Limit Value established by ACGIH)

7439-92-1	lead	A3
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· 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:

The product has been classified and marked in accordance with directives on hazardous materials.

· Hazard symbols:

C Corrosive

N Dangerous for the environment

· Hazard-determining components of labelling:

lead

zinc chloride

· Risk phrases:

33 Danger of cumulative effects.

34 Causes burns.

51/53 Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment

· Safety phrases:

1/2 Keep locked up and out of the reach of children.

28 After contact with skin, wash immediately with plenty of water

37/39 Wear suitable gloves and eye/face protection.

45 In case of accident or if you feel unwell, seek medical advice immediately.

61 Avoid release to the environment. Refer to special instructions/Safety data sheets

· Special labeling of certain preparations:

Warning. Contains lead.

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- **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.

REFERENCED STANDARDS

In this publication, reference is made to the standards listed below. Copies are available from the indicated sources.

American Welding Society, Inc.
550 N.W. LeJeune Road
Miami, FL 33126

AWS F1.1-1992 Methods for Sampling Airborne Particulates
Generated by Welding and Allied Processes
AWS F1.2-1992 Laboratory Method for Measuring Fume Generation
Rates and Total Fume Emission for Welding and
Allied Processes

American National Standards Institute
11 West 42nd Street
New York, NY 10036

ANSI 249.1-1994 Safety in Welding, Cutting and Allied Processes

Superintendent of Documents Administration
U.S. Government Printing Office
Washington, DC 20402

OSHA Standard 29 CFR 1910 Toxic and Hazardous Substances
Subpart Z
1910.1000 Air Contaminants Table Z-2

U.S. Department of Labor
Occupational Safety and Health Administration
200 Constitution Avenue
Room N-3101
Washington, DC 20210

OSHA Standard 29 CFR Material Safety Data Sheet (Non-Mandatory Form)
1910.1200

Environmental Protection Agency
401 M Street, S.W.
Washington, DC 20460

Sections 311, 312, 313 Emergency Planning and Community Right-To-Know
Act of 1986 (EPCRA)

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*American Conference of Governmental Industrial Hygienists
Technical Affairs Office
Kemper Woods Center
1330 Kemper Meadow Drive
Cincinnati, OH 45240 Threshold Limit Values (TLVs) for Chemical
Substances and Physical Agents*

- **Department issuing MSDS:** QS department
- **Contact:**
Ms. Monica Isenhart
phone +1-281-499 1212
- *** Data compared to the previous version altered.**

USA