

Chemical Identity	CAS #	Range %	OSHA PEL (mg/m3)	ACGIH-TLV (mg/m3)	Garcinogenicity	EU Classification (67/548/EEC)	CLP/GHS Classification (1272/2008)
Tin	7440-31-5	1-11	2	2	No	Not Dangerous	
#Copper	7440-50-8	55-65	1.0	1.0	No	 (F) R11	(H228) Flam. Sol. 1  (H400) Aquatic Acute 1 

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						 (N) R50	
#Zinc	1314-13-2	40-50	5.0	5.0	No	 (N), R50/53	(H400) Aquatic Acute 1  (H410) Aquatic C. 1 
Iron	7439-89-6	2-10	10 (as Fe2O3)	10 (as Fe2O3)	No	Not Dangerous	Not Hazardous
Boric Acid	10043-35-3	1-11	15	10	No	Repr. Cat. 2  (T), R60, R61	(H360FD) Repr. 1B 
Borax	1303-96-4	2-8	10	1	No	Repr. Cat. 2  (T), R60, R61	(H360FD) Repr. 1B 

Important: This section covers the materials of which the products manufactured. The fumes and gases produced during normal use of this product are covered in section 10. The term "Hazardous" in "Hazardous Material" should be interpreted as a term required and defined in OSHA Hazard Communication Standard 29CFR 1910-1200 and it does not necessarily imply the existence of hazard. The chemicals or compounds reportable by Section 313 of SARA are marked by the symbol #.

4. FIRST AID MEASURES:

Inhalation: Remove to fresh air immediately or administer oxygen. Get medical attention immediately.

Skin: Flush skin with large amounts of water and soap. If irritation develops and persists, get medical attention.

Eye: Flush eyes with water for at least 15 minutes. Get medical attention.

Ingestion: Obtain medical attention immediately if ingested. Rinse mouth.

5. FIRE-FIGHTING MEASURES:

Suitable Extinguishing Media: Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide. Use the extinguishing media recommended for the burning material and fire situation.

Unsuitable Extinguishing Media: Do not use water on molten metal. Large fires may be flooded with water from a distance.

Specific Hazards Arising From Chemical: Keep away from heat/spark/open flames/hot surfaces – No smoking.

Tin oxides, Copper oxides, Carbon oxides, Zinc oxides, Iron oxides, Borane/boron oxides, Sodium oxides

Protective Equipment: Fire fighters should wear complete protective clothing including self-contained breathing apparatus.

6. ACCIDENTAL RELEASE MEASURES:

Personal Precautions: Refer to section 8.

Environment Precautions: Refer to section 13.

Cleaning Measures: As an inert solid waste in accordance with state, local, and federal regulations.

California: Sodium Tetraborate Decahydrate is a "hazardous waste" in California and should be handled in accordance with state regulations.

EPA Hazardous Waste Number: None

RCRA (40 CFR 261): Sodium Tetraborate Decahydrate is not listed under any sections of the Federal Resource Conservation and Recovery Act.

Water Spill: Sodium Tetraborate Decahydrate will cause localized contamination of surrounding waters based on the quantity dissolved in these waters. At high concentrations, some damage to local vegetation, fish, and other aquatic life may be expected. Advise the local water authority that none of the affected water should be used for irrigation or for potable water until natural dilution returns boron level to normal.

7. HANDLING AND STORAGE:

Precautions for Safe Handling: Keep container tightly sealed. Store in cool, dry location in tightly closed containers. Ensure good ventilation at the workplace. Open and handle the container with care.

Conditions for Safe Storage: Store away from oxidizing agents. Keep container tightly sealed. Store at room temperature. Store in cool dry conditions in well sealed containers.

8. EXPOSURE CONTROLS/ PERSONAL PROTECTION:

	Class 1
Impact of Spatter	15 Drops
Heat Transfer (radiation)	RHTI 24 $\geq$ 7 seconds
Process	Manual welding with light formation of spatter and drops • Gas Welding • TIG Welding • MIG Welding • Micro plasma welding • Brazing • Spot Welding • MMA Welding (with rutile-covered electrode)

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Environmental Conditions	Operation of machines • Oxygen cutting machines • Plasma cutting machines • Resistance welding machines • Machines for thermal spraying • Bench welding
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Class 2	
Impact of Spatter	25 Drops
Heat Transfer (radiation)	RHTI 24 $\geq$ 16 seconds
Process	Manual welding with heavy formation of spatter and drops • MMA welding (with basic or cellulose-covered electrodes) • MAG welding (with CO₂ or mixed gases) • MIG Welding (with high current) • Self shielded flux core arc welding • Plasma cutting • Gouging • Oxygen cutting • Thermal spraying
Environmental Conditions	Operation of machines • In confined spaces • At overhead welding/cutting or in comparable constrained positions

9. PHYSICAL AND CHEMICAL PROPERTIES:

Appearance: Solid

Color: Blue/ 3175- pink/ 3176- white/ 3370-none/ 3375- none/3470- none/ 3475-none.

Odour: Odourless

Odour Threshold: Not Available

pH Value: Not Available

Specific Gravity: Not Available

Melting Point/Melting Range: 1560-2000° F, 850-1100° C

Freezing Point: Not Available

Boiling Point/Boiling Range: Not Available

Flash point: Not Available

Evaporation Rate: Not Available

Self-in flammability: Not Available

Explosion limits: Not Available

Vapour pressure: Not Available

Vapour density: Not Available

Density at 20°C: Not Available

Relative density: 6-9 g/cm³

Solubility: Insoluble in water.

Partition coefficient: Not Available

Auto-ignition temperature: Not Available

Decomposition temperature: Not Available

Other Information: No available data.



Hazardous Decomposition Products: Boric oxide fumes.

LD/LC50 Values that are relevant for classification		
Borax 1303-96-4		
Oral	LD50	2660 mg/kg (rat)

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Dermal	LD50	10000 mg/kg (rabbit)
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Chronic Effects: Overexposure to brazing and soldering fumes may affect pulmonary function. Chronic copper poisoning is typified by hepatic cirrhosis, brain damage and demyelination, kidney defect and copper deposition in the cornea as exemplified by humans with Wilson's disease. It has also been reported that copper poisoning has led to haemolytic anemia and accelerates arteriosclerosis, damage to the lungs, vomiting, diarrhoea, abdominal pain and blood disorders. Excessive inhalation of zinc oxide fumes may produce symptoms known as "Zinc Shakes" which are flu-like and usually cease when the individual is removed from the source. Prolonged or repeated exposure can cause vomiting, diarrhoea, lung irritation.

12. ECOLOGICAL INFORMATION:

Toxicity: No available data.

Persistence and Degradability: No available data.

Bio accumulative Potential: The following figures are the bio concentration factor (BCF) for the substances on their own.

BCF-

Copper, BCF: 29

Iron, BCF: 140000

Mobility in Soil: No available data.

Other Adverse Effects: No available data.

Welding materials could degrade into components originating from the materials used in the welding process. Avoid exposure to conditions that could lead to accumulation in soils or groundwater. Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

13. DISPOSAL CONSIDERATIONS:

Product: For product elimination, dispose of in accordance with EPA regulations.

Package: May be disposed in approved landfills provided local regulations are observed.

14. TRANSPORT INFORMATION:

UN-number: Not applicable

UN proper shipping name: Not applicable

Transport hazard class: Not applicable

Packing group: Not applicable

Environmental hazards: Not applicable

Special precautions for users: Not applicable

15. REGULATORY INFORMATION:

TSCA No.: Sodium Tetraborate Decahydrate appears on the EPA TSCA inventory list under the CAS no. 1330-43-4, which represents the anhydrous form of this inorganic salt.

RCRA: Sodium Tetraborate Decahydrate is not listed as a hazardous waste under any sections of the Resource Conservation and Recovery Act or regulations (40 CFR 261 et seq.).

Superfund: CERCLA/SARA. Sodium Tetraborate Decahydrate is not listed under CERCLA (the Comprehensive Environmental Response Compensation and Liability Act) or its 1986 amendments, SARA, (the Superfund Amendments and Reauthorization Act), including substances listed under Section 313 of SARA, Toxic Chemicals, 42 USC 11023, 40 CFR 372.65; Section 302 of SARA, Extremely Hazardous Substances, 42 USC 11002, 40 CFR 355; or the CERCLA Hazardous Substances list, 42 USC 9604, 40 CFR 302.

Safe Drinking Water Act: Sodium Tetraborate Decahydrate is not regulated under the SDWA, 42 USC 300g-1, 40 CFR 141 et seq. Consult state and local regulations for possible water quality advisories regarding Borax.

Clean Water Act (Federal Water Pollution Control Act): 33 USC 1251 et seq.

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