



MATERIAL SAFETY DATA SHEET

| Protective Clothing | NFPA Rating (USA) | EC Classification | WHMIS (Canada) | Transportation |
|---|---|---|------------------------------|-----------------------------|
|  |  | <p>Not Classified as Dangerous</p> | <p>Not Controlled</p> | <p>Not Regulated</p> |

Section 1: Product and Company Information

Product Name: TurboTorch Professional Viper, #60 Solder

Product Use: Solder Wire 90/10 mixture of Tin and Zinc

Manufacturer: Victor Equipment Company
 2800 Airport Road
 Denton, TX
 76207

Phone Number: (940) 566-2000

Fax: (800) 535-0557

24-hour Emergency: CHEMTREC: (800) 424-9300

Section 2: Composition and Ingredient Information

Hazardous/Dangerous Ingredients:

| Chemical Name | CAS No. | Wt. % | EINECS / ELINCS | Symbol | Risk Phrases |
|---------------|-----------|---------|-----------------|--------|--------------|
| Tin | 7440-31-5 | 90 - 95 | 233-141-8 | None* | None |
| Zinc | 7440-66-6 | 5 - 10 | 231-175-3 | N | R50/53 |

* This chemical substance is not classified in the Annex I of Directive 67/548/EEC.

Note: See Section 8 of this MSDS for exposure limit data for these ingredients.
 See Section 16 for the full text of the R-phrases above.

Section 3: Hazards Identification

Preparation Hazards and Classification: Zinc oxide fumes generated during soldering operations may cause eye, nose, throat and lung irritation. Inhalation of zinc oxide fumes may cause metal fume fever.

USA: This material is not considered hazardous by the OSHA hazard Communication Standard (29 CFR 1910.1200).

Canada: This is not a controlled product under WHMIS.

European Communities (EC): This product is not classified as dangerous according to Directive 1999/45/EC and its amendments.

Appearance, Color and Odor: ½ oz. coil of silver colored wire.

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Section 3: Hazards Identification, continued

Primary Route(s) of Exposure: Inhalation, Eye contact, Skin contact. Potential health effects statements may not be applicable as the hazardous ingredients listed are in the solid form. If zinc oxide fumes are generated during use by heating, then these statements will be applicable.

Potential Health Effects: **ACUTE (short term): see Section 8 for exposure controls**

Inhalation: Inhalation of fume particulates from soldering operations may cause metal fume fever and nose, throat and lung irritation. The symptoms of metal fume fever typically appear 4-8 hours after exposure and are associated with any combination of the following symptoms; thirst, metallic taste, cough, chills, fever, headache, chest tightening, shortness of breath, abdominal pain, vomiting and fatigue.

Ingestion: Not an applicable route of occupational exposure.

Skin: Overexposure to zinc oxide fumes generated during soldering operations may cause skin irritation. Contact with molten metal can cause skin burns.

Eye: Overexposure to zinc oxide fumes generated during soldering operations may cause eye irritation with symptoms of pain, redness, and tearing. Contact with molten metal can cause eye burns.

CHRONIC (long term): see Section 11 for additional toxicological data

Prolonged or repeated over-exposure to zinc oxide fumes by skin contact may cause dermatitis. Prolonged or repeated exposure to tin oxide fumes by inhalation may cause stannosis, a benign pneumoconiosis.

Medical Conditions Aggravated by Exposure: Inhalation of airborne fumes may aggravate pre-existing respiratory conditions. Skin contact may aggravate an existing dermatitis.

Section 4: First Aid Measures

Inhalation: Remove source of contamination or move victim to fresh air. Obtain medical advice. Note: Metal fume fever may develop 4-8 hours after exposure. If flu-like symptoms develop, obtain medical attention.

Eye Contact: **Molten Metal:** Immediately flush the contaminated eye(s) with gently flowing water for at least 15 minutes. Immediately obtain medical attention.
Solid Product: If fumes or dust enters the eyes, immediately flush the contaminated eye(s) with lukewarm, gently flowing water for at least 15 minutes. If irritation develops, obtain medical advice.

Skin Contact: **Molten Metal:** Immediately cool skin burns with cold packs or cool gently flowing water for at least 15 minutes. Do not put ice directly on the skin. Do not attempt to remove solidified product from the skin, as damage may result. Immediately obtain medical attention.
Solid Product: No health effects expected. If irritation occurs, quickly and gently, blot or brush away excess particulate. Wash gently and thoroughly with lukewarm, gently flowing water and non-abrasive soap for 5 minutes. If irritation persists, obtain medical advice.

Ingestion: Not an expected route of exposure; no first aid measures expected to be required.

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Section 5: Fire Fighting Measures

- Extinguishing Media:** Use extinguishing media appropriate for the surrounding fire.
- Unusual Fire and Explosion Hazards:** The solder wire is not flammable.
 Sensitivity to mechanical impact: Not sensitive
 Sensitivity to static discharge: Not sensitive
- Fire Fighting Instructions:** As for any fire, evacuate the area and fight the fire from a safe distance. Wear a pressure-demand, self-contained breathing apparatus and full protective gear. Fight fire from a protected location or a safe distance.
- Hazardous Combustion Products:** During a fire, products of combustion may include tin and zinc oxide fumes.

Section 6: Accidental Release Measures

- Personal Precautions:** Wear adequate personal protective equipment as indicated in Section 8. Ventilate the area if airborne dust or fume is present.
- Environmental Precautions:** Minimize entry of material into sewers and drainage systems.
- Methods for Containment:** Contain spill immediately.
- Methods for Clean-up:** Scrape or scoop product for re-use or place in a secure container for disposal.

Section 7: Handling and Storage

- Handling** During soldering operations, avoid contact with eyes and skin; do not breathe in fumes. Wear protective gloves. Wash thoroughly with detergent and water after handling, before eating, drinking, smoking or using the toilet. Remove contaminated clothing and wash before reuse.
- Storage:** Store in a cool, dry area. Store away from acids.

Section 8: Exposure Controls and Personal Protection

Exposure Limits

| <u>Ingredient</u> | <u>ACGIH TLV</u> <u>(8-hr. TWA)</u> <u>(mg/m³)</u> | <u>U.S. OSHA PEL</u> <u>(8-hr. TWA)</u> <u>(mg/m³)</u> | <u>Ontario (Canada)</u> <u>TWAEV</u> <u>(mg/m³)</u> | <u>UK OEL</u> <u>(8-hr. TWA)</u> <u>(mg/m³)</u> |
|-------------------|---|---|--|--|
| Tin, as Sn | 2 (metal) | 2 (inorganic compounds, except oxides) | 2 (metal, oxide and inorganic compounds) | 2 (inorganic) STEL: 4 (inorganic) |
| Zinc oxide | 2 (respirable) STEL: 10 (respirable) | 5 (fume) | 2 (respirable) STEV: 10 (respirable) | Not established |

STEV = Short Term Exposure Value
 STEL = Short Term Exposure Limit

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Section 8: Exposure Controls and Personal Protection, continued

Exposure Controls

Engineering Controls: Provide local exhaust ventilation or general dilution to maintain exposure levels below the exposure limits.

Personal Protection:

Respiratory Protection: When dust or fume concentrations in air exceed the occupational exposure guidelines, always wear respiratory protection. If respiratory protection is required, institute a complete respiratory protection program including selection, fit testing, training, maintenance and inspection.

A respiratory protection program that meets OSHA's 29 CFR 1910.134 and ANSI Z88.2 requirements or European Standard EN 529 or Canadian Standards Association (CSA) Standard Z94.4-02 must be followed whenever workplace conditions warrant a respirator's use.

Skin Protection: Wear protective gloves suitable for high temperature soldering operations.

Eye Protection: Wear safety glasses.

Other Protective Equipment:

A safety shower and eye-wash fountain in the work area are recommended.

Hygiene Measures:

Avoid breathing fumes of this material. Use adequate ventilation during soldering operations. Do not eat, drink or smoke in work areas. Wash hands after handling this product.

Section 9: Physical and Chemical Properties

| | | | |
|--|-----------------------------------|--|---------------------|
| <u>Physical State:</u> | Solid | <u>Vapor Pressure:</u> <u>(mm Hg @ 25°C)</u> | Not applicable |
| <u>Appearance:</u> | ½ oz. coil of silver colored wire | <u>Vapor Density:</u> <u>(Air = 1)</u> | Not applicable |
| <u>pH:</u> | Not applicable | <u>Solubility in Water:</u> | Insoluble in water. |
| <u>Relative Density:</u> <u>(water = 1)</u> | 7.26 | <u>Water / Oil distribution</u> <u>coefficient:</u> | Not applicable |
| <u>Boiling Point:</u> | Not available | <u>Odor Type:</u> | Odorless |
| <u>Melting Point:</u> | 199°C (390°F) | <u>Odor Threshold:</u> | Not applicable |
| <u>Viscosity:</u> | Not applicable | <u>Evaporation Rate:</u> <u>(n-Butyl Acetate = 1)</u> | Not applicable |
| <u>Oxidizing Properties:</u> | Not available | <u>Auto Ignition Temperature</u> <u>(°C):</u> | Not applicable |
| <u>Flash Point and Method:</u> | Not applicable | <u>Flammability Limits (%):</u> | Not applicable |

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Section 10: Stability and Reactivity

| | |
|---|---|
| <u>Stability:</u> | Stable |
| <u>Conditions to Avoid:</u> | Avoid incompatible materials. |
| <u>Incompatible Materials:</u> | Incompatible with acids. |
| <u>Hazardous Decomposition Products:</u> | Thermal decomposition may release harmful or irritating zinc oxide fumes. |
| <u>Possibility of Hazardous Reactions:</u> | Hazardous polymerization will not occur. |
| <u>Other Reactivity Concerns:</u> | Not available |

Section 11: Toxicological Information

Acute Toxicity Data

| <u>Ingredient</u> | <u>LD₅₀ Oral</u> (mg/kg) | <u>LD₅₀ Dermal</u> (mg/kg) | <u>LC₅₀ Inhalation</u> (4 hrs.) |
|-------------------|--|--|---|
| Tin | Not available | Not available | Not available |
| Zinc | Not available | Not available | Not available |

Chronic Toxicity Data

Carcinogenicity: The table below indicates whether each agency has listed any ingredient as a carcinogen.

| <u>Ingredient</u> | <u>ACGIH</u> | <u>IARC</u> | <u>NTP</u> |
|-------------------|--------------|-------------|------------|
| Tin | Not listed | Not listed | Not listed |
| Zinc | Not listed | Not listed | Not listed |

ACGIH: (American Conference of Governmental Industrial Hygienists)
IARC: (International Agency for Research on Cancer)
NTP: (National Toxicology Program)

| | |
|--|---|
| <u>Irritation:</u> | Zinc oxide fumes generated during soldering operations may cause eye, nose, throat and lung irritation. |
| <u>Sensitization:</u> | Not available |
| <u>Neurological Effects:</u> | Not available |
| <u>Teratogenicity:</u> | Not available |
| <u>Reproductive Toxicity:</u> | Not available |
| <u>Mutagenicity (Genetic Effects):</u> | Not available |
| <u>Toxicologically Synergistic Materials:</u> | Not available |
| <u>Target Organ Effects:</u> | Not available |

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Section 12: Ecological Information

| | |
|--|---|
| <u>Ecotoxicity:</u> | Zinc compounds released into the aquatic environment have long-term effects on the aquatic environment. This product is insoluble in water and is not expected to release dangerous compounds into the aquatic environment. |
| <u>Mobility:</u> | Not available |
| <u>Persistence and degradability:</u> | Not available |
| <u>Bioaccumulative potential:</u> | Not available |
| <u>Other adverse effects:</u> | Not available |

Section 13: Disposal Considerations

| | |
|--------------------------------------|--|
| <u>Waste Disposal Method:</u> | Do NOT discard into any sewers, on the ground or into any body of water. Store material for disposal as indicated in Section 7 Handling and Storage. |
| <u>USA:</u> | Dispose of in accordance with local, state and federal laws and regulations. RCRA Waste Codes: None |
| <u>Canada:</u> | Dispose of in accordance with local, provincial and federal laws and regulations. |
| <u>EC:</u> | Waste must be disposed of in accordance with relevant EC Directives and national, regional and local environmental control regulations. For disposal within the EC, the appropriate code according to the European Waste Catalogue (EWC) should be used. |

Section 14: Transport Information:

| | |
|---|----------------|
| <u>U.S. Hazardous Materials Regulation (DOT 49CFR):</u> | Not regulated |
| <u>Canadian Transportation of Dangerous Goods (TDG):</u> | Not regulated |
| <u>ADR/RID:</u> | Not regulated |
| <u>IMDG:</u> | Not regulated |
| <u>Marine Pollutants:</u> | Not applicable |
| <u>ICAO/IATA :</u> | Not regulated |

Section 15: Regulatory Information

| | |
|-------------------|---|
| <u>USA</u> | <u>TSCA Status:</u> All ingredients in the product are listed on the TSCA inventory. |
| | <u>SARA Title III:</u> |
| | Sec. 302/304: None |
| | Sec. 311/312: Not applicable |
| | Sec. 313: Zinc |
| | CERCLA RQ: Zinc |
| | <u>California Prop. 65 :</u> Not applicable |

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Section 15: Regulatory Information, continued

Canada

This product has been classified in accordance with the hazard criteria of the *Controlled Products Regulations* and the MSDS contains all the information required by the *Controlled Products Regulations*.

WHMIS Classification: Not controlled

NSNR Status (New Substance Notification Regulations): All substances in the product are listed, as required, on Canada's Domestic Substances List (DSL).

NPRI Substances (National Pollutant Release Inventory): Zinc compounds are NPRI Reportable substances.

EC Classification for the Substance/Preparation:

Symbol: This product is not classified as dangerous according to Directive 1999/45/EC and its amendments.

Risk Phrases: Not applicable

Safety Phrases: Not applicable

Section 16: Other Information

NFPA Hazard Rating

| Category | NFPA |
|--------------|------|
| Acute Health | 1 |
| Flammability | 0 |
| Instability | 0 |

Full Text of R-phrases appearing in Section 2: R50/53: Very toxic to aquatic organisms, may cause long-term adverse effects on the environment.

Preparation Information:

Preparation Date: April 25, 2008

Revision Date: Not applicable

Revision Summary: Not applicable

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