



# **Cole Metal Products Ltd**

**71 Strand Road, Bootle, Merseyside L20 4BB TEL: 0044 (0)151 933 8588 Email: sales@colemetal.co.uk**

## **Thermic Lance – Safety Information Guide**

Thermic lancing should be carried out in the open air, although good ventilation could allow work inside. Always ensure good ventilation and/or wear an approved respirator. Remove all flammable materials for a distance of at least ten metres from the place of work. Suitable fire precautions should be taken (i.e. fire fighting equipment made available) and protecting gas cylinders from sparks. The operator and other working personnel must work upwind of the lancing operation. Other personnel working downwind of the lancing operation must be at least 10 metres away. Sufficient sand should be made available to contain the molten material from the lancing operation.

Oxygen has no smell or taste and is difficult to detect. Normal oxygen content of air is 21%; if it becomes enriched by leaking oxygen to 30% there is an acute increase in the speed at which material will burn. Fires in oxygen enriched atmospheres are VERY difficult to extinguish and can spread rapidly across combustible materials from a single source such as a spark from a cigarette. In the presence of oil or grease, it can cause rapid oxidation that produces so much heat, that ignition can occur. Therefore, oil and grease on overalls or gas equipment can cause severe burns.

1. Turn off oxygen supply when not required
2. Prevent and test for any oxygen leakage
3. Test equipment daily for oxygen leaks, any leaks should be immediately rectified.

### Minimum Requirements:

1. Welding helmet/goggles for eye protection.
2. Flame retardant safety clothing (i.e. leather apron, caps etc.)
3. Respiratory equipment (i.e. type 3 disposable respirators)
4. Ear protection
5. Safety footwear
6. Hard hat depending on work area
7. Leak detection solution

**It is the users' duty under the Management of Health and Safety at work regulations to conduct a risk assessment, prior to commencing thermic lancing operations.**

There is a statutory requirement covering this type of operation embodied in Section 30 of the Factories Act 1961. There are also general requirements under Section 2 of the Health and Safety at Work Act 1974, to provide both a safe place of work and safe working systems. To ensure a safe system of working it may be necessary in some circumstances to use a Permit to Work procedure.



# **Cole Metal Products Ltd**

**71 Strand Road, Bootle, Merseyside L20 4BB TEL: 0044 (0)151 933 8588 Email: sales@colemetal.co.uk**

Clients should consider the products of combustion and refer to the COSHH Regulations 1999 and the current HSE Guideline Notes EH40 (Occupational Exposure Limits), EH54 (Assessment of exposure of fumes from welding and allied processes) and EH55 (the method of exposure to fumes from welding, brazing and similar processes).

## General Safety Points

- \* Check regulator pressure.
- \* Use effective protective equipment and wear it.
- \* Point lance in a safe direction when igniting.
- \* Handle the ignited lance with due caution and take care not to impinge on anything but the work in hand.
- \* Concentrate on watching closely the progress of the work.
- \* Hold the lance with sufficient grip to ensure full control at all times.
- \* If vision becomes impaired for any reason during the operation, turn off the oxygen supply, clear vision, re-ignite and continue operation. Do not attempt to work with impaired vision.
- \* Do not operate in the overhead position.
- \* Always comply with prescribed safety precautions and fire prevention procedures.

Disclaimer: This information is taken from sources or based upon data believed to be reliable. However, Cole Metal Products Ltd makes no warranty as to the correctness or sufficiency of any of the foregoing, or that additional or other measures may not be required under particular conditions.



# Cole Metal Products Ltd

71 Strand Road, Bootle, Merseyside L20 4BB TEL: 0044 (0)151 933 8588 Email: sales@colemetal.co.uk

## MATERIAL SAFETY DATA SHEET

### Product Identification:- Thermic Lance

#### 1. Hazardous Ingredients

| Chemical Name/Common Name | (CAS No.) | %                                       | Exposure Limits           |                |
|---------------------------|-----------|---|---------------------------|----------------|
|                           |           |   | ACGIHTLV                  | OSHA PEL       |
| <b>BASE METAL</b>         |           |   |                           |                |
| Iron                      | 7439896   | 99 max                                  | as Iron Oxide Fume<br>5   | 10             |
| Alloying Elements:        |           |   |                           |                |
| Carbon                    | 7440440   | .08 - 0.18                              | --                        | --             |
| Manganese                 | 7439965   | .30 - .60 (dust)                        | 5<br>(fume) 11            | 5 (c)<br>5 (c) |
| Phosphorus                | 7723140   | .015 - .035 (yellow)                    | .1                        | .1             |
| Sulphur                   | 7704349   | .02 max                                 | as Sulphur Dioxide<br>5.2 | 13             |
| Silicon                   | 7440213   | .02 max (dust)<br>(respirable fraction) | 10<br>--                  | 15<br>5        |
| Aluminium                 | 7429905   | .02 - .07 (dust)                        | 10<br>(fume) 5            | 15<br>5        |
| Copper                    | 7440508   | .10 max (dust)                          | 1<br>(fume) .2            | 1<br>.1        |
| Nickel                    | 7440020   | .06 max                                 | 1                         | 1              |
| Chromium                  | 7440473   | .05 max                                 | .5                        | 1              |
| Molybdenum                | 7439987   | .05 max                                 | 10                        | 15             |



# Cole Metal Products Ltd

71 Strand Road, Bootle, Merseyside L20 4BB TEL: 0044 (0)151 933 8588 Email: sales@colemetal.co.uk

## 2. Physical Data

|                                |   |
|--------------------------------|---|
| Boiling Point: N/A             | Specify Gravity (H <sub>2</sub> O = 1): N/A               |
| Vapour Pressure (mm Hg): N/A   | Melting Point: N/A  |
| Vapour Density (Air = 1): N/A  | Evaporation Rate (Butyl Acetate = 1): N/A                 |
| Solubility in Water: Insoluble | Appearance and Odour: Tubular steel - No Noticeable Odour |

---

## 3. Health Hazard Data

Primary Route(s) of Entry: (In the Form of Dust and/or Fumes Only)

Inhalation? Yes

Skin? No

Ingestion? No

\*UV Exposure

Carcinogenicity: NIF

---

### **Acute Effects of Overexposure:**

EYES: Local Irritation

SKIN: Local Irritation

INHALATION: Excessive exposure to fume may cause a sweet or metallic taste in the mouth, immediate dryness and irritation of the throat, tightness of the chest, and coughing. Several hours later, symptoms may progress to fever, malaise, perspiration, frontal headache, muscle cramps, low back pain, occasionally blurred vision, nausea, and vomiting. Pulmonary congestion, shortness of breath and symptoms of oxygen deficiency may also develop.

INGESTION: Nausea, Vomiting, and Purging

EXPOSURE TO UV: Exposure to UV Radiation can result in keratoconjunctivitis, also known as welders flash. Symptoms include inflammation, blurred vision, and headache.

---

### **Chronic Effects of Exposure:**

SKIN: Prolonged chronic or repeated skin contact with zinc dust or powder may cause a mild dermatitis.



# **Cole Metal Products Ltd**

**71 Strand Road, Bootle, Merseyside L20 4BB TEL: 0044 (0)151 933 8588 Email: sales@colemetal.co.uk**

INHALATION: Repeated over-exposure may cause prolonged forms of metal fume fever.

---

## **Toxicity Data:**

Job task data extrapolated over an eight hour TWA. Conditions for worst case scenarios. Zinc, total of 0.265 mg/m<sup>3</sup> and Chromium, total of 0.0354 mg/m<sup>3</sup>

- Mild irritation: 300 ug/3 days. Intermittent skin contact
  - Lowest toxic concentration: 124 mg/m<sup>3</sup>, 50 minute inhalation
- 

## **Medical Conditions Aggravated by Exposure:**

Respiratory illness/diseases, neurological and skin disorders/diseases.

---

## **Emergency and First Aid Procedures:**

EYE CONTACT: Flush with running water, including under the eyelids, for about 15 minutes. If irritation persists, seek medical attention.

SKIN CONTACT: Contaminated shoes and clothing should be removed and the affected area washed with soap and water.

INHALATION: Remove victim from exposure area to fresh air immediately. If breathing has stopped, give artificial respiration. Keep the affected person warm and at rest. Seek medical attention immediately.

INGESTION: If victim is conscious dilute the stomach and induce vomiting. Qualified medical personnel should remove remaining chemicals by gastric lavage. Seek medical attention immediately.

---

## **4. Fire and Explosion Hazard Data**

Flash Point (Method Used): NONE

Flammable Limits: N/A

LEL

UEL

Extinguishing MEDIA: N/A

Special Fire Fighting Procedures: N/A

Unusual Fire and Explosion Hazards: Oil and grease on torches can cause a violent reaction in the presence of oxygen.





# Cole Metal Products Ltd

71 Strand Road, Bootle, Merseyside L20 4BB TEL: 0044 (0)151 933 8588 Email: sales@colemetal.co.uk

## 5. Reactivity Data

Stability:  Unstable      Conditions to Avoid: Allowing gases to be trapped in a confined area.  
 Stable

**Incompatibility (Materials to Avoid):** Oil and grease on torch can cause a violent reaction in the presence of unburned oxygen.

## Hazardous Decomposition or By-Products

**Hazardous Polymerization:**  Will Occur      Conditions to Avoid  
 Will Not Occur

## 6. Spill or Leak Procedures

**Steps to be Taken in Case Material is Released or Spilled:** N/A

**Waste Disposal Method:** Comply with all local government regulations for proper disposal.

## 7. Special Protection Information

**Respiratory Protection:** Air purifying respirator if area is unventilated and local exhaust not available.

**Ventilation:** Local Exhaust - Use if in enclosed area  
Mechanical  
Other - Well ventilated area

**Protective Gloves:** Leather Gloves

**Eye Protection:** 4 - 5 minimum tinted glass recommended full face shield

**Other Protective Equipment:** Face shield, hard hat, leathers or fire retardant protective clothing, leather gloves





# **Cole Metal Products Ltd**

**71 Strand Road, Bootle, Merseyside L20 4BB TEL: 0044 (0)151 933 8588 Email: sales@colemetal.co.uk**

## **8. Special Precautions**

**Precautions to be Taken in Handling and Storing:** Warning - Keep away from oil and grease.

---

**Other Precautions:** Other hazards can be created based on material being cut eg., vapours released from residue while cutting.

## **9. Other Information**

Use proper procedure at all times as specified by the following:

1. Your company's Safe Practices Manual
2. COSHH Regulations 1999 and HSE current guideline notes EH40 (Occupational Exposure Limits)
3. EH54 (Assessment of exposure of fumes from all welding processes)
4. EH55 (the method of exposure to fumes from welding, brazing and similar processes)
5. Other applicable references

## **ABBREVIATIONS**

NA - Not Applicable      NE - Not Established  
NL - Not Listed          NIF - No Information Found

Disclaimer: This information is taken from sources or based upon data believed to be reliable. However, Cole Metal Products Ltd makes no warranty as to the correctness or sufficiency of any of the foregoing, or that additional or other measures may not be required under particular conditions.