

Manufacturer's Safety Data Sheet:

Thermic Lance Rods



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Statement of hazardous nature

A thermic lance comprises a mild steel tube containing a bundle of mild steel wires and one aluminium wire. The ingredients are identical to those used in the construction industry. There are no hazardous ingredients. Safe use of a thermic lance requires training and strict adherence to the instructions given in "Thermic lancing made easy", available from the manufacturer.

Company details

**Australian Thermic Lance Company
a Division of K & R Ladle Co Pty Ltd**

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Identification

Product name: Thermic lance rods
Mini thermic lance rods

Other names: Thermic lance bars, thermic lances,
burning bars, oxy lances.

Manufacturer's product code:

UN Number:	not applicable
Dangerous Goods Class and subsidiary risk:	not applicable
Hazchem Code:	not applicable
Poisons schedule number:	not applicable

Use: Cutting, drilling and gouging of metals, concrete and other solid materials

Physical description/properties

Appearance: Steel tube with steel wires inside.
Melting point: 1400°C

Vapour pressure:	not applicable
Specific gravity:	not applicable
Flashpoint:	not applicable
Flammability limits:	not applicable
Solubility in water:	not applicable

Other properties

Long tube (0.5 m to 2.75 m).
Heavy (0.3 kg to 7.0 kg)
Can be ignited if heated to a temperature in excess of 1000°C in pure oxygen gas.

Ingredients

External tube

Mild steel: iron >99%, carbon 0.06-0.10%, phosphorus <0.03%, manganese <0.50%, silicon 0.14-0.24%, sulfur <0.03%
CAS number: 7439-89-6

Internal steel wires

Mild steel: iron >99%, carbon 0.06-0.10%, phosphorus <0.03%, manganese <0.50%, silicon 0.14-0.24%, sulfur <0.03%
CAS number: 7439-89-6

Internal aluminium wires

High purity aluminium: aluminium >99%, carbon 0.10%, iron 0.40%, copper 0.05%, chromium 0.1%, zinc 0.05%, gallium 0.03%, vanadium 0.05%, titanium 0.15%.
CAS number: 742-99-05

There is one aluminium wire in each bundle of internal wires (approximately 5% by mass of wires or 3% of total mass).

Health hazard information

Health effects

Acute:

Swallowed	not applicable
Eye	May cause physical injury due to piercing.
Skin	May cause physical injury due to piercing.
Inhaled	not applicable

Chronic: not applicable

First aid:

Swallowed	not applicable
Eye	Treat injury due to piercing.
Skin	Treat injury due to piercing.
Inhaled	not applicable
First aid facilities	Bandages; sticking plasters for minor wounds.

Advice to doctor:

Treat wounds in conventional manner. There are no toxic chemicals to complicate treatment.

Precautions for use

The use of thermic lance rods for cutting, drilling and gouging operations, after ignition in a stream of oxygen gas, may create a hazardous situation if safe work practices are not followed. The manufacturer's booklet "Thermic Lancing Made Easy" must be read, understood and all precautions rigorously followed.

All operators of thermic lancing equipment should be trained in the use of welding and cutting equipment. In general, thermic lancing releases more heat than other cutting operations and sputtering of molten material may be greater.

A thermic lance, after ignition in oxygen gas, is extremely hot at the tip (4000°C), releases quantities of fume and may sputter molten mineral material towards the operator. A burning thermic lance can cause ignition or explosion of combustible materials in the work area and may cause catastrophic failure of prestressed or reactive materials. A thermic lance is electrically conducting and may lead to electrocution if live electrical wires are touched or cut. Oxygen equipment, if used in conjunction with a thermic lance, may cause manual handling injuries and, in the event of a

local release of oxygen gas, may stimulate explosive combustion of materials which are poorly combustible in air.

A full risk assessment must be carried out before each task involving the use of a thermic lance, in accordance with the Occupational Health and Safety Act 2000 and the Occupational Health and Safety Regulation 2001 in the State of New South Wales, or applicable legislation in other States or countries. Since thermic lancing is carried out in a wide range of environments, hazards in the work area must be considered in detail on a case-by-case basis. Personal protective equipment against hot molten material and against inhalation of fume must be provided for all personnel in the work area.

Exposure standards

Exposure standards for the inhalation of welding fume and mineral particles apply to thermic lancing operations, depending on the type or types of materials being cut. Heating of organic materials in the vicinity may release toxic gases or fume particles, depending on the nature of the organic materials; exposure standards may apply for these gases or particles.

Engineering controls

Arrange an extraction fan and cowl to remove fume from the work area, or use a fan to blow the fume away from the operator into an area where people will not breathe fume particles.

Personal protection

All personnel in the work area must have all parts of their bodies covered at all times when thermic lancing is in progress. Personal protective equipment must be designed to prevent injury in the event of hot molten material being sputtered towards any part of the body and to prevent inhalation of fume particles. All personnel in the work area must wear overalls, shield, respirator, goggles, fire-resistant hood, leather jacket, leather trousers, apron, gloves, spats and steel capped work boots.

Flammability

Thermic lances and the products of lancing operations (slag and fume) are not flammable. However, care must be taken not to ignite flammable materials in the work area and personnel must be aware of that release of oxygen gas may cause violent combustion or explosion of flammable materials.

Safe handling information

Storage and transport:

Store in a dry locations, above the ground and away from sources of oil or grease.

Spills and disposal:

Lances can be buried as landfill.
No toxic metals will leach from the material.

Fire/explosion hazard:

None

Other information:

Thermic lance rods have the same dangerous properties as pipes and tubes used in the building industry or in agriculture.

Contact point:

Australian Thermic Lance Company.
See page 1 for contact details.

Notes