

Material Safety Data Sheet

Product : **Thermal Analysis Carbon Cup**

Date : April 1999

1. Identification of Substances / Preparation and Company

Product

Thermal analysis cup – with tellurium or without tellurium.

Product Description

Thermal analysis carbon cup for rapid determination of carbon equivalent, carbon and silicon from the thermal arrest points of cooling iron.

Manufacturer / Supplier Address

Minco Sampling Techniques (UK) Ltd

Tofts Farm Ind Est (East)

Brenda Rd

Hartlepool

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2. Composition / Information on Ingredients

Description

Industrial silica sand, coated with phenolic resin, hexamine and stearate lubricants with loss on ignition varying between 1.5% and 6.5% depending on grade.

Mixture of zircon silicate, tellurium powder, alumino silicates and zirconia.

3. Hazard Identification

Main Hazard

Not classified as hazardous.

Health Effects

Inhalation – fumes produced on thermal decomposition may include formaldehyde, ammonia and phenol, which could present a health hazard.

Cups containing tellurium give rise to tellurium fume when cup is charged with molten metal, the concentration of these fumes and vapours is dependant upon the degree of natural ventilation in the workplace, and upon how frequent an analysis is required. Cups must be stored and used under dry conditions to avoid risk of splash of molten metal.

4. First Aid Measures

Inhalation

Remove to fresh air, seek medical attention if you feel unwell.

Summary

Unlikely to be hazardous if handled correctly.

5. Fire Fighting Measures

Cups are not flammable, but they are supplied in cardboard boxes which may be ignited.

Any fires affecting packaged carbon cups may be extinguished by water but the salvaged contents must not be used if wet.

This product may give rise to hazardous fumes in a fire.

Fumes produced on thermal decomposition include formaldehyde, ammonia and phenol which could present a health hazard.

Protective equipment for fire fighting : wear full protective clothing and self contained breathing apparatus.

6. Accidental Release Measures

Spillages – dry spillage, sweep or preferably vacuum up and collect in suitable containers for recovery or disposal.

Avoid creating dust.

Dampen down with water if possible.

7. Handling and Storage

Handling

Assess manual handling requirements.

A carbon cup should be placed firmly onto its stand, which should be on a level surface, ensuring a good electrical connection. The cup should then be charged until full with metal, to provide sufficient superheat to detect the liquidus.

If no extraction facility is available, operators should avoid direct breathing of evolved fumes.

A used cup will retain sufficient heat to cause severe burns or risk of fire if prematurely handled or disposed of near flammable material.

Storage

The storage area should be cool and dry.

The boxes should be palletised and kept dry.

The boxes should be protected from mechanical damage which may affect the integrity of the cup.

8. Exposure Controls and Personal Protection

Operators using Carbon Cups should be equipped with full safety clothing to resist metal splash as per BS 6249 part 1 1982 and should wear a secure safety helmet complete with visor, foundry boots and protective gauntlets.

Use operating procedures which will limit dust product and exposure of workers.

9. Physical and Chemical Properties

The cup is made from washed and processed industrial silica sand, coated with phenolic resin, hexamine and stearate lubricants. This is then coated with a thixotropic slurry and tellurium powder mixed with zircon silicate and alumino silicates.

The thermocouple is “k” type (NiCr – NiAl) and is electrically insulated within the cup using a ceramic stem.

10. Stability and Reactivity

Stable under normal conditions.

Heating may produce irritating fumes.

On thermal decomposition the product should be used in a well ventilated workplace.

11. Toxicological Information

Thermal decomposition products include : phenols, ammonia, formaldehyde, carbon monoxide gases, and tellurium fume.

Appropriate protective measures and good hygiene practises should be followed in order to minimise potential exposure.

12. Ecological Information

The product is resistant to biodegradation.

13. Disposal Considerations

Dispose of product or packaging in accordance with local and national regulations.

14. Transport Information

Keep material dry.

Thermal analysis cups should be stored under dry conditions and protected from mechanical damage, which may affect the integrity of the cup.

15. Regulatory Information

The following risk and safety phrases are recommended :-

R20 : harmful by inhalation

S22 : do not breathe dust

16. Other Information

Training advice : wear and use PPE.

Recommended use : to determine the carbon equivalent, carbon and silicon from the thermal arrest points of cooling iron.

The information contained in this safety data sheet is correct to the best of our knowledge but is given without warranty to its accuracy, reliability or completeness.

It is the users responsibility to satisfy itself as to the suitability and completeness of such information for their own particular use.

