



Steamline Industries Limited

(Triveni Group of Companies)

Corporate Office : 901/904, Jagdamba Commercial Complex A/2, Near Movie Time Theatre, Link Road, Malad (W), Mumbai 400 064. INDIA
Phone : 91 - 22 - 4099 9700 (100 Lines) Fax : (91 - 22) 4099 9777 Email : info@steamlineind.com CIN - U51900MH1991PLC062917

SAFETY DATA SHEET

PRODUCT- SAFETY MATCHES as supplied by The Bell Match Company

1. Identification and Company

Safety Matches

UN1944

Class 4.1

M/s. Steamline Industries Limited

901/904, Jagdamba Commercial Complex

A/2, Near Movie Time Theatre,

Link Road, Malad (W),

Mumbai- 400064.

India.

Tel: 91-22-4099 9700

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2. Composition and Ingredients

Matches consist of an impregnated wooden stick dipped in a head composition. The splints are made from Poplar wood and this is impregnated with ammonium dihydrogen phosphate to prevent afterglow. Before the head is applied each splint is dipped in paraffin wax as a supplementary fuel. The product is contained in boxes manufactured from recycled cardboard. Part of the outside of the matchbox is coated with a chemically active paint against which the matches are struck.

Matches contain many ingredients including potassium chlorate as an active component. The remaining materials are animal glue or gelatine as a binder and various inert mineral fillers to moderate the combustion. In addition they contain pigments or dyestuffs to impart a colour to the match head.

The hazardous material in the head is:

Substance

Potassium Chlorate

Composition Range

48-50%

SDS# 994 ITEM# 896947

897130

896035

The striking surface also contains red amorphous phosphorus at about 70% of the dry solids.

A single match head contains typically 20mg of composition and the friction panel will typically have around 0.03gm/mm² of red amorphous phosphorus.





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3. Hazards Identification.

Matches contain mixtures of oxidizing agents (Potassium Chlorate) and fuels. Safety matches will not ignite, in normal circumstances, unless they are rubbed against the friction strip provided on the box. In exceptional circumstances such as severe impact or heavy striking on a smooth, non-thermally conducting surface (e.g. glass), and safety matches can ignite. Safety matches do not ignite on heating until the temperature exceeds 180°C.

Whilst potassium chlorate is classified as a harmful substance the quantity present in a single head is very low (typically 10mg)

The main hazards associated with matches arise from the fact that they are readily combustible and as such misuse can result in burns and possible uncontrolled fires with consequent danger to life.

4. First Aid Measures

Unless large quantities of matches are ingested (say more than 10 matches per kilogram of body weight) then the risk to health is negligible. If this dosage is exceeded, then seek medical attention.

5. Firefighting Measures

Water is the most effective extinguishant for match fires. Halocarbon extinguishers should not be used. Match fires produce much smoke and small quantities of acidic gases are released such as phosphorus oxides and possible hydrogen chloride. In large conflagrations involving matches breathing apparatus should be used.

6. Accidental Release Measures

The likelihood of match head composition being released into the environment is low. If significant quantities of matches are released by breakage or spillage then remove all potential sources of ignition, salvage any undamaged product and wet down the remaining product before clearing up.

7. Handling and Storage

In storage, matches give off no toxic fumes or flammable gases. Matches do not spontaneously catch fire although fires can occur if the product is mishandled. Handling and storage requirements are such as to minimize the likelihood of fires starting and propagating. Matches should be stored in a cool dry place away from potential sources of ignition, and other highly flammable materials.

They should not be stacked higher than 15 feet since dropping from greater height may result in sustained ignition of the product. Adequate space around the product should be left to minimize the chances of impact damage from, for example, manoeuvring forklift trucks.





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It should be noted that any ignition of matches in intact closed boxes, displays and cases invariably self extinguishes itself because there is insufficient oxygen in the closed packaging. Only when the case or packaging bursts open is there any danger of sustained combustion taking place.

8. Exposure Controls/ Personal Protection

No special measures are required when handling matches. In the event of fire see section 5.

9. Physical and Chemical Properties.

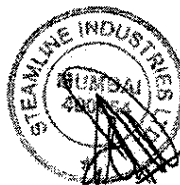
Appearance	Wooden splints carrying an ignition tip of composition
Odour	Low, Woody smell
pH	An aqueous extract of packaged matches is approximately neutral (pH range 6-8)
Boiling point/range	Not applicable.
Melting Point/range	Not applicable.
Flash point	Not applicable.
Flammability	Not applicable.
Autoflammability	Safety matches may self ignite at temperature $>180^{\circ}\text{C}$.
Explosive properties	Not applicable.
Oxidising properties	Contains potassium chlorate
Vapour pressure	Not applicable
Relative density	Not applicable
Solubility	In water – approximately 10 mg of each match is soluble in cold water. In fat - approximately 15 mg of each match is soluble in Hydrocarbon solvents
Partition coefficient	Not applicable

10. Stability and Reactivity

Matches are perfectly stable under all normal ambient conditions and they have a long shelf life (>5 years). They are liable to spontaneous combustion at temperatures exceeding 180 C. They may also ignite under extreme impact conditions.

Matches should be stored under dry conditions. If they become wet and are subsequently dried out the burning characteristics of the product may be adversely affected.

If ignited in large quantities matches produce much smoke and some phosphorus oxides.





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11. Toxicological Information:

Ingestion of large quantities could prove fatal.

12. Ecological information:

The product is bio degradable.

13. Regulatory information:

The product meets EN 1783 standards

14. Disposal Considerations

Large quantities of matches can be safely disposed of either to land fill at an approved site or by controlled incineration. If incineration is used for disposal then scrubbing of the flue gas to remove the phosphorus oxides may be necessary.

15. Transport Information

Safety matches are classified as articles in the Approved Carriage List. The substance identification number is 1944; Packs containing in excess of 1 kg of matches must carry the 'flammable solid' hazard warning.

16. Other information:

Basic training in safe handling of this product is required.

Signed

Name : A K RATNAM

Title : Export Manager