



## SAFETY DATA SHEET

*This Safety Data Sheet complies with the Canadian Hazardous Product Regulations, the United States Occupational Safety and Health Administration (OSHA) Hazard Communication Standard, 29 CFR 1910 (OSHA HCS), and the European Union Directives.*

### 1. Product and Supplier Identification

- 1.1 **Product:** Coghlan's Storm Matches #1170
- 1.2 **Other Means of Identification:** Windproof Matches (c/w Striker Sheets),  
Matches for Survival Kits.
- 1.3 **Product Use:** Waterproof matches
- 1.4 **Restrictions on Use:** None known
- 1.5 **Producer:** Coghlan's Ltd.,  
121 Irene Street,  
Winnipeg, Manitoba  
Canada, R3T 4C7
- Telephone: +1(204) 284-9550  
Facsimile: +1(204) 475-4127
- Supplier:** As above
- 1.6 **Emergencies:** +1(877) 264-4526

### 2. Hazards Identification

- 2.1 **Classification of product or mixture**  
Note to reader: The information provided in this Safety Data Sheet applies solely to the match head and not the fibre/wood portion onto which the match head is attached.

This product in an untested mixture and GHS classification is based on the classification of the ingredients and their concentrations. Proprietary ingredients, if any, do NOT exhibit any health effects not listed in this SDS.

**GHS Classification:** Flammable Solid, Category 2  
Acute Toxicity, Oral, Category 4  
Acute Toxicity, Inhalation, Category 4  
Acute Aquatic Toxicity, Category 2  
Chronic Aquatic Toxicity, Category 2

**Note:** Aquatic Toxicity not currently required in Canada

**2.2 GHS Label Elements, including precautionary statements**

**Pictogram:**



**Signal Word:** Warning

**GHS Hazard Statements:** H228: Flammable Solid  
H302: Harmful if swallowed.  
H332: Harmful if inhaled.  
H401: Toxic to aquatic life.  
H411: Toxic to aquatic life with long lasting effects.

**GHS Precautionary Statements:**

<b>Prevention:</b>	P210: Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. P264: Wash hands thoroughly after handling. P270: Do not eat, drink or smoke when using this product. P273: Avoid release to the environment. P280: Wear protective gloves/protective clothing/eye protection/face protection.
<b>Response:</b>	P370+P378: In case of fire use water as first choice. Sand, earth, dry chemical, foam or CO <sub>2</sub> may be used to extinguish. P312: Call a POISON CENTRE or doctor/physician if you feel unwell. P301+P312: IF SWALLOWED: Call a POISON CENTRE or doctor/physician if you feel unwell. P304+P340: IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. P330: Rinse mouth P391: Collect spillage. Do not leave spilled matches in the environment.
<b>Storage:</b>	Store in a cool, dry, well-ventilated area away from sources of ignition, oxidizing agents, food stuffs, clothing, direct sunlight and children.
<b>Disposal:</b>	P501: Dispose of contents/container in accordance with local regulations, following product label directions.

**2.3 Hazards not otherwise classified (HNOC) or not covered by GHS:** When striking matches, danger of skin burns may occur.

**2.4 Additional Information**

**Primary Routes of Entry:**

Skin Contact:	Yes
Skin Absorption:	No
Eye Contact:	Yes
Ingestion:	No
Inhalation:	Yes

**Emergency Overview:** When striking these matches, care must be taken to prevent injury by burns to skin and eyes. Striking matches will release gaseous compounds that are irritating to the respiratory tract.

**Effects of Short-Term (Acute) Exposure:**

**Inhalation:** Striking matches will release gaseous compounds that are irritating to the respiratory tract.

**Skin Contact:** These matches contain compounds which may cause skin sensitization. Irritation may occur causing a rash. Skin contact with a burning match will cause significant burns. Strike matches away from face to prevent sparks from touching skin or entering eyes. Skin rash may occur in persons predisposed to skin problems. Wash hands after handling matches to prevent residue from being ingested by touching mouth.

**Eye Contact:** Smoke or vapours from the burning matches may cause transient eye discomfort. Accidental entry of sparks into the eye may cause permanent eye damage.

**Ingestion:** Accidental ingestion is unlikely due to form of product. If matches are ingested, compounds in the striking material are toxic. Immediately contact a POISON CONTROL CENTRE, doctor or nearest hospital for treatment advice.

**Effects of Long-Term (Chronic) Exposure:** No adverse health effects are indicated. Acute health effects are more serious.

**Medical Conditions Aggravated By Exposure:** None known

### 3. Composition

#### 3.1 Mixture composition

**Note:** *Composition expressed as percentages of active ingredients and does not take into account the non-reactive portions of the match, is the match stick.*

Component	% (w/w)	GHS Classification
Potassium Chlorate CAS No 3811-04-9 EINECS No 223-289-7	30 - 60	Oxidizing Solid, Category 1 Acute Toxicity, Oral, Category 4 Acute Toxicity, Inhalation, Category 4 Acute and Chronic Aquatic Toxicity, Category 2
Iron Oxide CAS No 1309-37-1 EINECS No 215-168-2	<8	No GHS Classification
Red Phosphorus (In Striker) CAS No 7723-14-0 EINECS No 231-768-7	<70	Flammable Solid, Category 1 Acute and Chronic Aquatic Toxicity, Category 3
Red Phosphorus (In Head) CAS No 7723-14-0 EINECS No 231-768-7	<1	Flammable Solid, Category 1 Acute and Chronic Aquatic Toxicity, Category 3

## 4. First Aid Measures

### 4.1 Description of First Aid Measures

**General advice:** If ingested, immediately call a POISON CONTROL CENTRE, doctor or nearest hospital for treatment advice. For burns, seek medical advice. Wash hands after handling. Do not eat drink or smoke until washing the hands.

**In case of eye contact:** Immediately flush eyes with plenty of water. If irritation occurs or persists, flush eyes with plenty of fresh water, holding eyelids open. Remove contact lenses if easy to do. Call a physician if an irritation persists.

**In case of skin contact:** Wash hands immediately with soap and water after handling. Do not eat, drink or smoke until hands are thoroughly washed. If irritation occurs or persists seek medical advice.

**If inhalation:** Inhalation is a route of entry. Move victim to fresh air. If breathing is labored, give artificial respiration. Seek medical attention if breathing is difficult or discomfort occurs.

**If ingestion:** This product is orally toxic if ingested. If ingested immediately call a POISON CONTROL CENTRE, doctor or nearest hospital for treatment advice. Provided that patient is conscious, rinse mouth with water. Do NOT give anything to an unconscious person. Do not induce vomiting unless instructed to do so by a physician or the poison control center. If spontaneous vomiting occurs, have victim lean forward with head between knees to avoid aspirating vomitus, Rinse mouth and give 2 – 4 cups water, if conscious.

### 4.2 Most important symptoms and effects, both acute and delayed

#### Effects of Short-Term (Acute) Exposure:

**Inhalation:** Striking matches will release gaseous compounds that are irritating to the respiratory tract.

**Skin Contact:** These matches contain compounds which may cause skin sensitization. Irritation may occur causing a rash. Skin contact with a burning match will cause significant burns. Strike matches away from face to prevent sparks from touching skin or entering eyes. Skin rash may occur in persons predisposed to skin problems. Wash hands after handling matches.

**Eye Contact:** Smoke or vapours from the burning matches may cause transient eye discomfort. Accidental entry of sparks into the eye may cause permanent eye damage.

**Ingestion:** Accidental ingestion is unlikely due to form of product. If matches are ingested, compounds in the striking material are toxic. Immediately contact a POISON CONTROL CENTRE, doctor or nearest hospital for treatment advice.

**Effects of Long-Term (Chronic) Exposure:** No adverse health effects are indicated. Acute health effects are more serious.

**Medical Conditions Aggravated By Exposure:** None known

### 4.3 Indication of any immediate medical attention and special treatment needed

In the case of accidental ingestion, it is important to get treatment immediately.

## 5. Fire Fighting Measures

### 5.1 Extinguishing Media

**Suitable extinguishing media:** Product is flammable. When ignited, blow out and immerse in water if safe to do without burning the skin. Cover with sand and then wet the sand. For larger quantities, use water or water spray or carbon dioxide.

### 5.2 Special hazards arising from mixture: None

**Advice for firefighters:** In any fire situation, firefighters should wear full protective clothing including self contained breathing apparatus. Firefighters must use standard protective equipment including flame retardant coat, helmet with face shield, gloves, rubber boots, and in enclosed spaces, SCBA.

### 5.3 Further Information:

**Sensitivity to Impact:** No  
**Sensitivity to Static Discharge:** Yes

#### NFPA HAZARD INDEX:

HEALTH HAZARD: 0

FIRE HAZARD: 2

REACTIVITY HAZARD: 2

## 6. Accidental Release Measures

### 6.1 Personal precautions, protective equipment and emergency procedures

All spill responders involved in a cleanup of this product must follow good industrial hygiene practices. A small spill can be handled routinely. Wear suitable protective equipment and eye protection to prevent skin and eye contact. Extinguish all sources of ignition and remove matches if safe to do so.

**Respiratory Protection:** To avoid inhaling smoke/vapours, use self-contained breathing apparatus.

**Skin protection:** Wear suitable protective equipment to prevent skin contact.

**Eye and Face Protection:** Wear chemical goggles or full face protection.

**Footwear:** No specific recommendation.

**Other:** None

### 6.2 Environmental precautions

This product may cause damage to the aquatic environment. Ensure that spilled material does not enter sewers or natural waterways. If spill catches fire, the water used to extinguish the fire may contain a chemical that is toxic to aquatic life.

### 6.3 Methods and materials for containment and cleanup

Clean up spills immediately to protect human health and the environment. Scoop or sweep up material, keeping dust to a minimum and place in an appropriate container for disposal. If on soil, skim top layer of contaminated soil and place in an appropriate container for disposal. Once the spill has been remediated, arrange for disposal of the containers. Properly label containers to identify contents.

**Remedial Measures:** Do not use unprotected hands to collect spilled material. Ensure proper protective equipment is used to prevent contact with skin and eyes. Avoid the creation of dust.

**Large Spills:** Shovel spilled product into adequate compatible containers, skimming soil as well to ensure all released product and contaminated soil is recovered. Properly close and label all containers for disposal.

**Small Spills:** Scoop or sweep up spilled contents and place in appropriate containers for disposal.

**6.4 Reference to other sections**

For disposal, see Section 13.

## 7. Handling and Storage

**7.1 Precautions for safe handling**

**Handling Procedures:** While handling matches, a residue on skin may be transferred to mouth by accident. Wash thoroughly and immediately after handling this product and before eating, drinking, smoking or using the toilet.

**7.2 Conditions for safe storage, including incompatibilities**

**Storage: Keep out of reach of children and animals.** Keep container closed when not in use and store in a cool, dry, well-ventilated area away from heat, flame, sources of ignition, direct sunlight, foodstuffs and clothing. Protect from sparks, heat or flame. Empty containers may contain residues which are hazardous. Always keep matches in the container sold with them. Store away from incompatible materials such as strong oxidizers, strong acids or alkalis.

In bulk storage areas, post "NO SMOKING" signs. Have appropriate fire extinguishers located in an accessible place near storage area. Keep containers closed when not in use. Prevent static discharges and use proper grounding procedures. Do not stack pallets more than three high.

**7.3 Specific end use(s)**

No other uses except those mentioned in Section 1.3

## 8. Exposure Controls, Personal Protection

**8.1 Control parameters**

**Components with workplace control parameters**

Potassium Chlorate, CAS No 3811-04-9	No exposure controls listed
Iron Oxide, CAS No 1309-37-1	TLV-TWA: 5 mg/m <sup>3</sup> ACGIH* OSHA Table Z-1 Limits for air contaminants TWA: 10 mg/m <sup>3</sup>
Red Phosphorus, CAS No 7723-14-0	OSHA Table Z-1 Limits for air contaminants TWA: 0.10 mg/m <sup>3</sup>

\* ACGIH: American Conference of Governmental Industrial Hygienists. Exposure limits may vary from time to time and from one jurisdiction to another. Check with local regulatory agency for the exposure limits in your area. OSHA: Occupational Safety and Health Administration. OSHA: Occupational Safety and Health Administration.

## 8.2 Exposure Controls

**Engineering Controls:** Avoid breathing dust, vapours or smoke from burning these matches.

**Respiratory Protection:** Not applicable for consumers provided package instructions are followed. In circumstances of high concentration of smoke, a NIOSH approved air purifying respirator with N, P or R95 or HE filter and an organic vapour cartridge may be permissible.

**Skin protection:** Not applicable for consumers following product directions. In bulk situations or when handling is prolonged use adequate skin protection.

**Eye and Face Protection:** Not applicable for consumers following product directions. Strike matches away from face.

**Footwear:** No specific recommendation.

**Other:** None

### Control of environmental exposure

None

## 9. Physical and Chemical Properties

### 9.1 Information on basic physical and chemical properties

<b>Appearance:</b>	Solid, fibre matchstick
<b>Odour:</b>	Slight woody
<b>Odour Threshold:</b>	Not applicable
<b>pH:</b>	Not determined
<b>Melting Point/Freezing Point:</b>	Not determined
<b>Initial Boiling Point:</b>	Not determined
<b>Flash Point:</b>	Not applicable
<b>Evaporation Rate:</b>	Not available
<b>Flammability:</b>	Flammable
<b>Upper Explosion Limit:</b>	Not available
<b>Lower Explosion Limit:</b>	Not available
<b>Vapour Pressure:</b>	Not available
<b>Vapour Density:</b>	Not available
<b>Relative Density:</b>	Not determined
<b>Solubility:</b>	Partly soluble in water
<b>Partition Coefficient:</b>	Not available
<b>Autoignition Temperature:</b>	Not determined
<b>Decomposition Temperature:</b>	Not available
<b>Viscosity:</b>	Not available
<b>Explosive Properties:</b>	Not available
<b>Oxidizing Properties:</b>	Not available
<b>Percent Volatiles:</b>	Not available

9.2 Other safety information: None

## 10. Stability and Reactivity

### 10.1 Reactivity

May be reactive under conditions of heat.

### 10.2 Chemical Stability

Stable under recommended storage conditions. Storage should be in a dry, cool, well-ventilated area away from incompatible materials, sources of ignition and heat, out of direct sunlight.

**10.3 Possibility of hazardous reactions**

No known hazardous reactions

**10.4 Conditions to avoid**

Heat, sparks, flames, sources of ignition which may cause matches to light. During fire, irritating and possible toxic gases may be generated by thermal decomposition or combustion.

**10.5 Incompatible materials**

Strong oxidizing agents, strong acids and alkalis.

**10.6 Hazardous decomposition products**

Oxides of potassium and phosphorus, hydrogen chloride as well as unknown irritation gases may be generated by thermal decomposition or combustion.

## 11. Toxicological Information

**11.1 Information on toxicological effects**

**Acute toxicity**

Acute Toxicity, Oral, Category 4, H302: Harmful if swallowed.  
Acute Toxicity, Inhalation, Category 4, H332: Harmful if inhaled

**Skin corrosion/irritation**

No GHS classification

**Serious eye damage/eye irritation**

No GHS classification

**Respiratory or skin sensitization**

No GHS classification

**Germ Cell Mutagenicity**

No GHS classification

**Carcinogenicity**

No GHS classification

**Reproductive toxicity**

No GHS classification

**Specific Target Organ Toxicity – Single exposure**

No GHS classification

**Specific Target Organ Toxicity – Repeated exposure**

No GHS classification

**Aspiration Hazard**

No GHS classification

**Aquatic Toxicity**

Acute Aquatic Toxicity, Category 2: H401: Toxic to aquatic life.  
Chronic Aquatic Toxicity, Category 2: H411: Toxic to aquatic life with long lasting effects.



**Additional information**

Component	LD <sub>50</sub>	LC <sub>50</sub>
Potassium Chlorate CAS No 3811-04-9	1870 mg/kg (oral/rat) >2000 mg/kg (dermal/rabbit)	>5.1 mg/l (inhalation, rat/ 4 hr)
Iron Oxide CAS No 1309-37-1	>10,000 mg/kg (oral/rat)	N/d
Red Phosphorus (In Head and Striker) CAS No 7723-14-0	15,000 mg/kg (oral/ female rat) Dermal N/d	N/d

## 12. Ecological Information

**12.1 Toxicity**

**Aquatic**, Acute Aquatic Toxicity, Category 2: H401: Toxic to aquatic life

**Aquatic**, Chronic Aquatic Toxicity, Category 2: H411: Toxic to aquatic life with long lasting effects

**Data:**

Potassium Chlorate: *Toxicity to algae*, static test EC50: Nitzschia Closterium, 2.8 mg/l, 72 hour

Red Phosphorus: *Toxicity to fish*, static test LC50, Danio rerio (Zebra Fish), 33.2 mg/l, 96 hour  
*Toxicity to daphnia and other aquatic invertebrates*, EC50, Daphnia magna (water flea), 10.5 mg/l, 48 hour  
*Toxicity to algae*, static test EC50: Desmodesmus subspicatus (Green Algae), 18.3 mg/l, 72 hour

**12.2 Persistence and degradability**

No data available

**12.3 Bioaccumulative potential**

No data available

**12.4 Mobility in soil**

No data available

**12.5 Results of PBT and vPvB assessment**

Not conducted

**12.6 Other adverse effects**

No data available

## 13. Disposal Considerations

**13.1 Waste treatment methods**

**Product:**

Do not reuse empty containers. Dispose of product according to all applicable local, state (provincial), and federal regulations. Offer to a licensed disposal company, properly contained and labelled.

**Contaminated Packaging:**

As above

## 14. Transport Information

**Transport of Dangerous Goods (TDG and CLR):** UN1944, Matches, Safety, Class 4.1, PG III

**United States Department of Transport (49CFR):** UN1944, Matches, Safety, Class 4.1, PG III

**International Air Transport Association (IATA):** UN1944, Matches, Safety, Class 4.1, PG III

**International Maritime Organization (IMO):** UN1944, Matches, Safety, Class 4.1, PG III  
EmS No F-A, S-I, Stowage Category A



## 15. Regulatory Information

### CANADIAN FEDERAL REGULATIONS:

**CEPA, DOMESTIC SUBSTANCES LIST:** Listed

### AMERICAN FEDERAL REGULATIONS:

**TSCA: Toxic Substance Control Act:** Ingredients listed

**CERCLA Hazardous Substance List (40 CFR 302.4)** Not regulated

**SARA 302 Extremely hazardous substance:** Red Phosphorus  
CAS No 7723-14-0, Rev Date 1991-07-01

**SARA 311/312 Hazardous chemical:** Fire Hazard, Acute Health Hazard, Chronic Health Hazard

**SARA 313 (TRI reporting):** SARA 313: This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

### **Other State Regulations:**

#### ***Massachusetts Right to Know Components:***

Red Phosphorus, CAS No 7723-14-0	Rev Date 1991-07-01
Potassium Chlorate, CAS No 3811-04-9	Rev Date 1993-04-24
Iron Oxide, CAS No 1309-37-1	Rev Date 2007-03-01

#### ***Pennsylvania Right to Know Components:***

Red Phosphorus, CAS No 7723-14-0	Rev Date 1991-07-01
Potassium Chlorate, CAS No 3811-04-9	Rev Date 1993-04-24
Iron Oxide, CAS No 1309-37-1	Rev Date 2007-03-01

#### ***New Jersey Right to Know Components:***

Red Phosphorus, CAS No 7723-14-0	Rev Date 1991-07-01
Potassium Chlorate, CAS No 3811-04-9	Rev Date 1993-04-24
Iron Oxide, CAS No 1309-37-1	Rev Date 2007-03-01

**California Prop 65 Components:** This product does not contain any chemicals known to the State of California to cause cancer, birth defects, or any other reproductive harm.

**OTHER:**

None

## 16. Other Information

**Original Preparation Date:** September 21, 2016

**Prepared by:** Technical Department, Coghlan's Ltd.

**Disclaimer:** This Safety Data Sheet (SDS) was prepared using information provided by CCINFO, ingredient supplier SDS and other relevant sources. This product has been classified using weight of evidence, expert judgment and previous testing as per Part 1.3 of the Fifth Edition of The Globally Harmonized System of Classification and Labelling of Chemicals (GHS). The information in this SDS is offered for your consideration and guidance when exposed to this product. Coghlan's Ltd expressly disclaims all expressed or implied warranties and assumes no responsibilities for the accuracy or completeness of the data contained herein. The data in this SDS does not apply to use with any other product or in any other process.

***This Safety Data Sheet may not be changed, or altered in any way without the expressed knowledge and permission of Coghlan's Ltd.***

**Revisions:** March 25, 2018, Table in Section 3 changed. Toxicity data moved to Section 11.  
December 17, 2018, Revised Transportation Information in Section 14