

# **FIRE****DRAGON**

## **GREEN & CLEAN SOLID FUEL**

### **Fire Dragon Safety Data Sheet (SDS)**

Revision Date: 20/04/2014

Revision Number: 4

Replaces all previous versions.

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### **1. Identification of the substance/mixture and of the company/undertaking**

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#### 1.1 Product identifier

Product Name: Fire Dragon Solid Fuel

Company product code: FD336

#### 1.2 Relevant identified uses of the substance or mixture and uses advised against

Identified Uses: Substance is a true gel alcohol fuel.  
Intended for use as a firelighter and/or cooking fuel.

#### 1.3 Details of the supplier of the safety data sheet

Company / Supplier: BCB International  
Address: Unit 21  
Stradey Business Park  
Llanelli  
SA14 8YP  
United Kingdom  
Telephone: +44 (0)1554 823824  
Fax: +44 (0)1554 820493  
E-mail: [info@bcbin.com](mailto:info@bcbin.com)

#### 1.4 Emergency telephone number

Telephone: +44 (0)1554 823824 (08:00 – 17:00 Mon-Friday only)

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## 2. Hazards identification

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### 2.1 Classification of the substance or mixture

#### Classification (EC) No. 1272/2008:

Physical and Chemical Hazards: Flammable Solid, Category 1 – H228

Human Health: Eye Irritant, Category 2 – H319

Environmental: Not classified

Classification 1999/45/EEC: F, R11; Xi, R36

The Full Text for all R-Phrases and H-Statements are displayed in Section 16.

#### The most important adverse effects:

Physical and Chemical: See Section 9 for physicochemical information

Human Health: See Section 11 for toxicological information

Environmental Effects See Section 12 for environmental information

### 2.2 Label elements

Labelling according to Regulation (EC) No 1272/2008



Hazard pictograms:

Signal word: Danger

Hazard statements: H228 Flammable solid.

H319 Causes serious eye irritation.

Precautionary statements: P101 If medical advice is needed, have product container, or label at hand.

P102 Keep out of reach of children.

P103 Read label before use.

P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

P240 Ground/bond container and receiving equipment.

P241 Use explosion-proof

	electrical/ventilating/light/equipment.
P264	Wash hands thoroughly after handling.
P280	Wear protective gloves/protective clothing/eye protection/face protection.
P305 + 351 + 338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P337 + 313	If eye irritation persists get medical advice/attention.
P370 + 378	In case of fire: Alcohol resistant foam, Dry Powder, Carbon Dioxide, Water Fog, Sand.

### 2.3 Other hazards

This product is highly flammable, with container open explosive vapour/air mixtures may be formed even at normal room temperatures.

During combustion/fire the product becomes molten and exhibits flow.

In high concentrations vapours and spray mists are narcotic and may cause headache, fatigue, dizziness and nausea.

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## **3. Composition/information on ingredients**

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### 3.2 Mixtures

Hazardous Components	Amount (%)	Classification (Regulation (EC) No 1272/2008)		Classification (67/548EEC)
		Hazard Class	Hazard Statement	
Completely denatured alcohol (CDA) Index No.: 603-002-005 CAS No.:64-17-5 EC No.: 200-578-6 Registration No.: 01-2119457610-43-xxxx 01-2119457558-25-xxxx 01-2119457290-43-xxxx	80 - 90	Flam. Liq. 2  Eye Irrit. 2	H225  H319	Highly Flammable; F; R11

The Full Text for all R-Phrases and H-Statements are displayed in Section 16.

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## 4. First aid measures

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### 4.1 Description of first aid measures

General advice:	Rest, warmth and fresh air. Do not give victim anything to drink if unconscious. Seek medical attention if any discomfort continues. Show this safety data sheet to the doctor in attendance.
Inhalation:	Remove to fresh air and rest. If symptoms persist, seek medical attention.
Skin contact:	Immediately remove contaminated clothing. Wash off promptly and flush contaminated skin with water. Promptly remove clothing if soaked through and flush skin with water.
Eye contact:	Flush with sterilised water for at least 10 minutes. Remove any contact lenses and open eyes wide apart. Avoid washing chemical from one eye into the other. If irritation persists, seek medical attention
Ingestion:	Immediately rinse mouth and drink plenty of water or milk. Keep person under observation. Do not induce vomiting. If vomiting occurs, keep head low. Transport immediately to hospital and bring this safety data sheet.

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

Symptoms:	See Section 11 for more detailed information on health effects and symptoms
Effects:	See Section 11 for more detailed information on health effects and symptoms

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

Treatment: Treat symptomatically.

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## 5. Firefighting measures

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### 5.1 Extinguishing media

Suitable Extinguishers: Alcohol resistant foam, dry powder, carbon dioxide, water fog, and sand.

Unsuitable extinguishers: Do not use high pressure water jets.

### 5.2 Special hazards arising from the substance or mixture

Specific hazards: The product will ignite upon contact with sources of ignition and will continue to burn after removal of ignition source. The vapour may be invisible, heavier than air and spread along the ground. During combustion/fire, solid will become molten and exhibit flow. Vapours may form explosive mixtures with air. Flash back possible over considerable distance. During combustion/fire hazardous decomposition products may be produced such as: carbon monoxide (CO), carbon dioxide (CO<sub>2</sub>). Combustion with other materials may liberate toxic gases or vapours.

### 5.3 Advice for firefighters

Special protective equipment: In the event of fire, wear self-contained breathing apparatus. Wear appropriate body protection e.g. boots, overalls, gloves, eye/face and head protection.

Additional information: During combustion/fire, solid will become molten and exhibit flow. Keep surrounding closed containers cool with water spray. Heating of containers will cause an increase in internal pressure leading to a risk of bursting. Collect contaminated fire extinguishing water separately. The must not be discharged into drains.

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## 6. Accidental release measures

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

Personal precautions: Use personal protective equipment. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Remove all sources

of ignition. Evacuate personnel to safe areas. Beware of vapours accumulating to form explosive concentrations. Vapours can accumulate in low areas. For personal protection see section 8.

## 6.2 Environmental precautions

Environmental precautions: Ensure waste and contaminated materials are collected and removed from the work area as soon as possible in a suitably labelled container. Do not flush into surface water or sanitary sewer system.

## 6.3 Methods and materials for containment and cleaning up

Cleaning directions: Contain spillage, and then collect with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations (see Section 13). Collect waste absorbent with either an electrically protected vacuum cleaner or by wet-brushing. Wash area thoroughly with water after.

## 6.4 Reference to other sections

See Section 1 for emergency contact information.

See Section 8 for information on personal protective equipment.

See Section 13 for waste treatment information.

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# **7. Handling and storage**

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## 7.1 Precautions for safe handling

Safe handling: Avoid spilling, skin and eye contact. Avoid inhalation of vapour or mist. Keep away from sources of ignition - No smoking. Take measures to prevent the build-up of electrostatic charge. If left exposed flammable and irritating vapours will be emitted. For precautions see Section 2.2.

## 7.2 Conditions for safe storage, including any incompatibilities

Storage: Store in sealed original container in a dry, cool and well-

ventilated place. Keep away from direct sunlight and sources of heat. Do not store with oxidizing agents. This item is intended for single use.

### 7.3 Specific end use(s)

End uses: Apart from the uses mentioned in Section 1.2, no other specific uses are stipulated.

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## 8. Exposure controls/personal protection

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### 8.1 Control parameters

Component	CAS-No.	Value	Control Parameters	Basis
Ethanol	64-17-5	TWA 8 hrs	1000 ppm 1920 mg/m <sup>3</sup>	UK. EH40 WEL – Workplace Exposure Limits.

Note: Where no specific short-term exposure limit is listed, a figure three times the long-term exposure should be used.

### 8.2 Exposure controls

Appropriate engineering controls: Provide adequate ventilation or local extraction appropriate to ensure the defined work place exposure limits (WELs) are not exceeded.



Personal protective equipment:

Personal protective equipment should never replace effective elimination, reduction or isolation risk control measures.

Eye and face protection: Contact lenses should not be worn when working with this product. Wear suitable safety glasses e.g. EN 166.

Hand protection: Wear suitable gloves. The glove material has to be impermeable and resistant to the product. As the product is a mixture of several substances, the durability of the glove

material cannot be calculated in advance and should be tested before use. Protective gloves should be replaced if damaged or otherwise compromised through wear and tear. Protective gloves should comply with EN 374.

Respiratory protection:	No personal respiratory protective equipment is normally required in well ventilated areas. In case of insufficient ventilation, wear suitable respiratory aid equipment. A Type A filter is recommended.
Skin and body protection:	Impervious clothing, Flame retardant antistatic protective clothing,
Environmental exposure controls:	Prevent further leakage or spillage if safe to do so. Do not let product enter drains.

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## 9. Physical and chemical properties

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### 9.1 Information on basic physical and chemical properties

Appearance:	Solid, colourless, partially translucent.
Odour:	Alcoholic
Odour threshold:	No data available
pH:	8
Melting point (°C):	60-65
Boiling point (°C):	78
Flash point (°C):	8 (Cleveland Open Cup; BS EN ISO 2592:2001)
Evaporation rate:	No data available
Flammability (solid, gas):	No data available
Upper explosion limit:	19% (V)
Lower explosion limit:	3.3% (V)
Vapour pressure:	5.85 kPa (20 °C)
Vapour density:	No data available
Relative density:	0.84 (20 °C)
Solubility:	Partially soluble in water.
Partition coefficient - n-octanol/water:	No data available



Auto-ignition temperature:	363
Decomposition temperature:	No data available
Viscosity:	No data available
Explosive properties:	Formation of explosive air/vapour mixtures is possible.
Oxidising properties:	No data available

## 9.2 Other Information

Fire point (°C):	8 (Cleveland Open Cup; BS EN ISO 2000-36:2002)
Gross calorific value (MJ / kg):	29 (approximately)

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## **10. Stability and reactivity**

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### 10.1 Reactivity

Advice: Stable under recommended storage conditions.

### 10.2 Chemical stability

Stability: No decomposition anticipated if stored sealed in original package. Product is stable under normal ambient conditions when storing or handling.

### 10.3 Possibility of hazardous reactions

Hazardous reactions: No data available

### 10.4 Conditions to avoid

Conditions to avoid: Heat, flames, sparks, extremes of temperature, and direct sunlight.

### 10.5 Incompatible materials

Materials to avoid: Alkali metals, ammonia, oxidising reagents, peroxides.

### 10.6 Hazardous decomposition products

Decomposition products: Thermal decomposition or combustion can liberate carbon oxides will be produced (e.g. carbon dioxide (CO<sub>2</sub>) and carbon monoxide (CO)). Combustion with other materials can release other toxic gases or vapours. See Section 5.

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## 11. Stability and reactivity

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### 11.1 Information on toxicological effects

#### 11.1.1 Mixture

Acute toxicity:	Toxic Dose – LD50 > 2000 mg/kg (oral rat) Toxic Concentration – LC50 > 20 mg/l (4hr mouse)
Irritation:	Causes serious eye irritation.
Corrosivity:	No data available
Sensitisation:	No data available
Repeated dose toxicity:	No data available
Carcinogenicity:	No data available
Mutagenicity:	No data available
Toxicity for reproduction:	No data available
Information on likely routes of exposure:	
Inhalation:	In high concentrations vapours may irritate the throat and respiratory system causing coughing.
Ingestion:	Gastrointestinal symptoms; nausea, upset stomach, vomiting
Skin contact:	Repeated exposure may cause skin dryness or cracking
Eye contact:	Irritating, and may cause redness and pain.
Other information:	To the best of our knowledge the chemical, physical, and toxicological properties have not been thoroughly investigated.

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## 12. Ecological information

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### 12.1 Toxicity

Toxicity:	LC 50: > 100 mg/l (96 hrs, Fish) EC 50: > 100 mg/l (48 hrs, Daphnia) IC 50: > 100 mg/l (72 hrs, Algae)
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### 12.2 Persistent and degradability

Persistence:	No data available
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### 12.3 Bioaccumulative potential

Bioaccumulation:	No data available
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#### 12.4 Mobility in soil

Soil mobility: No data available

#### 12.5 Results of PBT and vPvB assessment

Assessment results: PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

#### 12.6 Other adverse effects

Other information: Will dissolve, and disperse in an aqueous environment.  
Do not flush into surface water or sanitary sewer system.  
Avoid subsoil penetration.

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### **13. Disposal considerations**

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#### 13.1 Waste treatment methods

Product: Burn in a chemical incinerator equipped with an afterburner and scrubber but exert extra care in igniting as this material is highly flammable. Offer surplus and non-recyclable product to a licensed hazardous waste disposal company. Any material used to control spillage must be disposed of in the same way.

Packaging: Empty contaminated packaging thoroughly. This can be recycled after thorough and proper cleaning. Packaging that cannot be cleaned is to be disposed of in the same manner as the product.

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### **14. Transport information**

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#### 14.1 UN number

UN Number: 1325

#### 14.2 UN proper shipping name

Name: Flammable solid, Organic, NOS,  
(Solid ethanol fuel blocks)

#### 14.3 Transport hazard class(es)

ADR/RID/ADN: Class 4.1; Flammable solid

IMDG: Class 4.1; Flammable solid

IATA/IACO: Class 4.1; Flammable solid



Packing label:

14.4 Packaging group

ADR/RID/ADN: 3  
IMDG: 3  
IATA/IACO: 3

14.5 Environmental hazards

ADR/RID: No  
IMDG: No  
IMDG Marine pollutant: No

14.6 Special precautions for the user

Precautions: No data available

14.7 Transportation in bulk according to Annex II MARPOL 73/78 and IBC code

IMDG: Not applicable

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**15. Regulatory Information**

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This safety data sheet complies with the requirements of Regulation (EC) No. 1907/2006

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

Regulations: Control of Substances Hazardous to Health Regulations 2002  
Other regulations: Directive 92/85/EEC: Health and safety of pregnant workers.  
Directive 94/33/EC: Protection of young people at work.  
Workplace Exposure Limits 2005 (EH40)

15.2 Chemical safety assessment

Assessment: No chemical safety assessment was carried out for this product.

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## 16. Other information

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Revision Date:	20/04/2015
Revision Number:	4
Reason:	Substantial format changes and inclusion of new information to comply with EC No. 1907/2006.
Key literature references:	This safety data sheet was compiled using data from suppliers and the “Database of registered substances” of the European Chemical Agency (ECHA).
Evaluation method(s):	In accordance with Article 9 of Regulation (EC) No. 1272/2008, this product was evaluated with respect to the physical state of the product being supplied and its reasonable intended use as specified in Section 1.2. For criteria where data was directly available, this data was included. For criteria where no or inadequate data for the product was held, bridging principles were applied.
Full text of R-phrases:	
R11	Highly flammable
Full text of H-statements:	
H228	Flammable solid
H319	Causes serious eye irritation

The information in this Safety Data Sheet should be provided to all who will use, handle, store, transport or otherwise be exposed to this product. This information has been prepared for the guidance of plant engineering, operations, management and for people working with or handling this product. This information is believed to be reliable and correct at the Revision Date, and represents the best information currently available and known by BCB International Ltd. However, BCB International Ltd makes no guarantee or warranty, express or implied, with respect to such information and we assume no liability and anticipated used and is for the material without chemical additions or alterations. Users should make their own investigations to determine the suitability of the information for their particular purposes. It is the responsibility of the user to undertake a suitable risk assessment/COSHH assessment prior to using the material.