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**EP-A-0 023 829
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GB-A-1 544 635**

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**The file contains technical information
submitted after the application was filed and
not included in this specification**

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EP 0 056 696 B1

Description

The invention relates to firelighters.

A well known firelighter in general domestic use is the so called white firelighter which comprises a solid block and which is based on a kerosine/urea formaldehyde resin system.

It is known to add powdered talc to such white firelighter composition to control combustion and extend the burning time.

A typical particle size for powdered talc is 0.05 millimetres.

Thus a 40 gram piece of white firelighter without talc will burn for about 15 minutes, whereas a 40 gram piece containing 0.6% by weight of such talc will burn for about 22 minutes.

The longer burn and controlled heat release are of advantage in lighting solid fuels which are difficult to ignite.

Further, GB—A—1 544 635 discloses a combustible composition comprising a matrix of cured resin having distributed therethrough hydrocarbon oil and also particles of a solid combustible material in which the particles are of size such that at least 95% thereof are retained on a sieve of mesh number 35 (nominal aperture size 0.44 mm); the combustible composition may contain a substance to extend the burning time and one such substance is talc which may be present in an amount up to 1% w/w of the solid combustible material.

There is no mention in this specification of the particle size of the talc which may optionally be used in the manufacture of the firelighters disclosed in GB—A—1 544 635.

EP—A—0 023 829 relates to combustible compositions which may be used as firelighters and the compositions comprise a matrix of solid resin having distributed therethrough combustible liquid, and water characterised in that the composition also contains up to 25% by weight of expanded perlite distributed therethrough; the compositions may contain a certain amount of talc, and one particular group of compositions comprises at least five parts of expanded perlite, from 5 to 25 parts water, from 65 to 85 parts kerosine, and up to 1.2 parts of talc, parts being by weight.

EP—A—0 023 830 is concerned with ignitable combustible compositions comprising a matrix of solid resin having distributed therethrough combustible liquid, and water characterised in that the composition also contains up to 25% by weight of a particulate non-combustible solid having a specific surface area of not greater than 8 m²/g distributed therethrough; this earlier specification discloses that talc is not satisfactory as the non-combustible particulate material to be used in accordance with this earlier invention but an amount of talc up to 1.2% may be used in addition to the non-combustible particulate material, except when such material is exfoliated vermiculite.

Neither of the two European Specifications mentioned above makes any reference to the particle size of talc.

The firelighters with which this invention is concerned utilize a kerosine-in-water emulsion.

The aqueous phase of this emulsion contains a resin syrup which is caused to set by the use of a catalyst or hardener, thus producing a solid combustible material. Previously, it had not been possible to include more than about 1% by weight of talc in such a firelighter because of a deleterious effect on emulsion stability.

It has now been discovered that by using talc having a larger particle size relative to the previous typical particle sizes known in the art, greater levels of talc may be included in white firelighters with beneficial results.

Accordingly the present invention provides a firelighter composition comprising a liquid hydrocarbon fuel emulsified in a resin, the composition also containing particles of talc having a size greater than 0.1 millimetres.

Preferably the fuel comprises kerosine.

The talc particle sizes preferably lie in the range 0.2 to 2 millimetres.

Preferably a material known commercially as talc tailings is used.

The talc may comprise up to 10% by weight of the composition.

The advantages conferred on a white firelighter by inclusion of larger particles of talc (e.g. talc tailings) are as follows:—

(i) burning time is further extended.

(ii) combustion control is increased and the firelighter burns with a reduced flame height. Thus the heat output is used more effectively within the fuel bed rather than being dissipated up the chimney as heat and light.

(iii) there is an economy of use of essential raw materials, particularly kerosine.

Effects (i) and (ii) listed above combine to afford a firelighter of superior performance to known white firelighters.

By way of example, specific embodiments of the invention will now be described, with reference to the following Examples.

Control 1

Firstly, a control composition was manufactured by making a white firelighter using the following ingredients:—

	Ingredients	Percentage by weight
	Kerosine	81.5%
5	Urea-formaldehyde resin	8.0%
	Emulsifier	0.5%
	Water	9.0%
10	Hardener	1.0%

A piece of this firelighter of dimensions 64.5×31.66×23 millimetres weighed 40 grams and burned for 14 minutes 30 seconds.

Control 2

A further control composition was made, using the same ingredients as Control 1, but with 0.6% by weight of the kerosine replaced by powdered talc.

A 40 gram piece of the Control 2 firelighter composition burned for 22 minutes.

Example 1

A firelighter composition according to the invention was made using the following ingredients:—

	Ingredients	Percentage by weight
25	Kerosine	72.4%
	Ureaformaldehyde resin	7.1%
30	Emulsifier	0.5%
	Talc tailings (AC11)	10.0%
	Water	9.0%
35	Hardener	1.0%

The talc tailings were grade AC11 obtained from Richard Baker Harrison Limited of Liverpool.

A piece of this firelighter of similar dimensions to that of the control firelighters weighed 43 grams and burned for 25 minutes.

The Control 2 white firelighter piece was used to ignite a fixed charge of Coalite solid fuel in a room heater. Two pieces were required and a good fire was established 30 minutes after the firelighters were spent.

The firelighter of Example 1 was used to ignite Coalite under exactly similar conditions. One piece only was required and a good fire was established 15 minutes after the firelighter was spent.

Example 2

A firelighter was made as Example 1, but an alternative talc tailings material, grade T15 from Richard Baker Harrison Limited, was employed.

One piece, having the same dimensions as the pieces mentioned above, weighed 38 grams and burned for 24 minutes.

In neither Example 1 nor Example 2 was the stability of the emulsion affected by the addition of the talc.

The invention is not restricted to the details of the foregoing Examples.

Claims

1. A firelighter composition comprising a liquid hydrocarbon fuel emulsified in a resin, the composition also containing particles of talc, characterised in that the talc particles have a size greater than 0.1 millimetres.

2. A firelighter as claimed in Claim 1, in which the fuel comprises Kerosine.

3. A firelighter as claimed in Claim 1 or Claim 2, in which the talc particle sizes lie in the range 0.2 to 2 millimetres.

4. A firelighter as claimed in any one of the preceding claims, in which the talc comprises talc tailings.

0 056 696

5. A firelighter as claimed in any one of the preceding claims, in which the talc comprises up to 10% by weight of the composition.

6. A firelighter composition as claimed in Claim 1, comprising the following:—

Ingredients	Percentage by weight
Kerosine	72.4%
Ureaformaldehyde resin	7.1%
Emulsifier	0.5%
Talc tailings	10.0%
Water	9.0%
Hardener	1.0%

Patentansprüche

1. Eine Feueranzünder-Zusammensetzung, umfassend einen flüssigen, in ein Harz emulgierten Kohlenwasserstoff-Brennstoff, wobei die Zusammensetzung zusätzlich Talkteilchen enthält, dadurch gekennzeichnet, daß die Talkteilchen eine Größe von mehr als 0,1 mm haben.
2. Ein Feueranzünder nach Anspruch 1, dadurch gekennzeichnet, daß der Brennstoff Kerosin umfaßt.
3. Feueranzünder nach Anspruch 1 oder 2, dadurch gekennzeichnet, daß die Talkteilchengröße im Bereich zwischen 0,2 und 2 mm liegen.
4. Feueranzünder nach einem der vorhergehenden Ansprüche, dadurch gekennzeichnet, daß der Talk Talkschlamm umfaßt.
5. Feueranzünder nach einem der vorhergehenden Ansprüche, dadurch gekennzeichnet, daß der Talk bis zu 10 Gew.-% der Zusammensetzung ausmacht.
6. Feueranzünder-Zusammensetzung nach Anspruch 1, umfassend die folgenden Bestandteile:

Bestandteile	Gew.-%
Kerosin	72,4%
Harnstoff-Formaldehydharz	7,1%
Emulgator	0,5%
Talkschlamm	10,0%
Wasser	9,0%
Härter	1,0%

Revendications

1. Composition d'allume-feu comportant un combustible formé d'un hydrocarbure liquide, émulsionné dans une résine, cette composition contenant également des particules de talc, caractérisée en ce que les particules de talc possèdent une taille supérieure à 0,1 millimètre.
2. Allume-feu selon la revendication 1, dans lequel le combustible contient du pétrole lampant.
3. Allume-feu selon la revendication 1 ou 2, dans lequel les tailles des particules de talc se situent dans la gamme de 0,2 à 2 mm.
4. Allume-feu selon l'une quelconque des revendications précédentes, dans lequel le talc contient des grumeaux de talc.
5. Allume-feu selon l'une quelconque des revendications précédentes, dans lequel le talc intervient pour jusqu'à 10% en poids de la composition.
6. Composition d'allume-feu selon la revendication 1, contenant ce qui suit:

0 056 696

	Ingrédients	Pourcentage en poids
	Pétrole lampant	72,4%
5	Résine urée-formaldéhyde	7,1%
	Emulsifiant	0,5%
	Grumeaux de talc	10,0%
10	Eau	9,0%
	Durcisseur	1,0%
15		
20		
25		
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45		
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60		
65		