

Date: 11.02.2010

Former date: 28.12.2006

**1. IDENTIFICATION OF THE CHEMICAL AND OF THE MANUFACTURER, IMPORTER OR OTHER UNDERTAKING****1.1 Identification of the substance or preparation**

Trade name

Vapo Wood pellets

Code of the preparation

**1.2 Use of the chemical****1.2.1 The intended uses of the chemical**

Solid fuel

**1.2.2 Standard industrial classification (SIC)** X99**1.2.3 Use categories (UC62)** 27**1.2.4 The chemical can be used by the general public** X**1.2.5 The chemical is used by the general public only** **1.3 Identification of the manufacturer, importer or other undertaking****1.3.1 Manufacturer, importer, other undertaking**

Vapo Oy

**1.3.2 Contact information:**

Street address

Yrjönkatu 42

Postcode and post office

40100 Jyväskylä

Post-office box

Box 22.

Postcode and post office

40101 Jyväskylä

Telephone number

+358 20 790 4000

Telefax

+358 20 790 5707

Y code

0174817-6

**1.3.3 Information on foreign manufacturer****1.4 Emergency telephone****1.4.1 Telephone number, name and address**

+358 9 4711, HYKS, Myrkytystietokeskus, Stenbäckinkatu 11, 00290 Helsinki

**2. COMPOSITION AND INFORMATION ON INGREDIENTS****2.1 Hazardous ingredients**

2.1.1 CAS number or other code	2.1.2 Name of the ingredient	2.1.3 Concentration	2.1.4 Warning symbol, R phrases and other data on the ingredient

**2.1.5 There has been a request for confidentiality of a substance according to Annex 3 of the decree** **2.1.6 A substance not dangerous has been indicated as confidential** **2.1.7 Other information****3. HAZARDS IDENTIFICATION****4. FIRST AID MEASURES****4.1 Special instructions**

No special ill effects

**4.2 Inhalation**

No special ill effects

**4.3 Skin contact**

No special ill effects

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- 4.4 Eye contact**  
No special ill effects
- 4.5 Ingestion**  
No special ill effects
- 4.6 Information to doctor or other trained persons giving first aid**  
No special information to doctor.

## **5. FIRE-FIGHTING MEASURES**

- 5.1 Suitable extinguishing media**  
Softened water (softener e.g. soap, because pellets and dust is rather dry, it won't wet without softener properly.)
- 5.2 Extinguishing media which must not be used for safety reasons**  
Not determined.
- 5.3 Special exposure hazards in a fire**  
No expository danger.
- 5.4 Special protective equipment for fire-fighters**  
General: Evacuate all personnel. Use protective equipment for fire-fighting.
- 5.5 Other instructions**  
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## **6. ACCIDENTAL RELEASE MEASURES**

- 6.1 Personal precautions**  
Use protective clothes.
- 6.2 Environmental precautions**  
Product is not including hazardous agents for environment.
- 6.3 Methods for cleaning up**  
Product is biodegradable.
- 6.4 Other instructions**  
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## **7. HANDLING AND STORAGE**

- 7.1 Handling**
- 7.2 Storage**  
Must be stored at dry place. Properties of pellets and form of product will be changed rapidly if pellets are contacted with water.
- During long time storing of pellets emissions of volatile organic compounds are possible, especially with pellets made of softwood. During storage the amount of natural lipids in pellets will be reduced due to oxidation. Due to oxidation in pellets strong smell, aldehydes and even selfheating of stock piles are possible. Adequate air ventilation of storage/warehouse is very important to prevent phenomenon.
- 7.3 Specific use(s)**  
Energy production, as a fuel.

## **8. EXPOSURE CONTROLS/PERSONAL PROTECTION**

### **8.1 Exposure limit values**

- 8.1.1 HTP values**  
Dust: not determined absolutely to wood, but for organic dust HTP, 8h 5 mg/m<sup>3</sup> ja 15 min 10 mg/m<sup>3</sup>.
- 8.1.2 Other limit values**
- 8.1.3 Limit values in other countries**

### **8.2 Exposure controls**

- 8.2.1 Occupational exposure controls**  
DURING CLEANING OF PELLET SILOS OR OTHER CLOSED STORAGES ENSURE SAFETY WORKING CIRCUMTANCES. In closed pellet storage CO emissions are possible.
- 8.2.1.1 Respiratory protection**  
Forceful handling of pellets requires use of respiratory protecting equipment. During working at storage adequate air ventilation must be ensured. In closed pellet storage CO emissions are possible. CO-emissions will convert to CO<sub>2</sub> in the atmosphere.
- 8.2.1.2 Hand protection**  
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8.2.1.3 Eye protection

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8.2.1.4 Skin protection

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8.2.2 Environmental exposure controls

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## 9. PHYSICAL AND CHEMICAL PROPERTIES

### 9.1 General information (physical state, colour and odour)

Solid, blond and natural wood odour.

### 9.2 Important health, safety and environmental information

#### 9.2.1 pH

app. 5-6

#### 9.2.2 Boiling point/boiling range

Not applicable

#### 9.2.3 Flash point

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#### 9.2.4 Flammability (solid, gas)

Not specified to woodpellets. For dust from wood pellets normal wood dust can be applied: Wood dust, fine, inflammability IS 2,42. Wood dust minimum inflammability energy  $E_{\min}$  20 mJ. Inflammability for fine wood dust is strong. For rough-grained wood dust/particles inflammability, IS 0,16.

#### 9.2.5 Explosive properties

##### 9.2.5.1 Lower explosive limit

Not specified to woodpellets. For dust from wood pellets normal wood dust can be applied: Explosion strength ES fine wood dust 1,49. Minimum explosive dust content  $30 \text{ g/m}^3$ . Explosion strength ES rough-grained wood dust/particles ES 0,68.

##### 9.2.5.2 Upper explosive limit

Not specified to woodpellets. For dust from wood pellets normal wood dust can be applied: Fine wood dust explosion index EI 3,61. Rough-grained wood dust/particles explosion index EI 0,11.

#### 9.2.6 Oxidising properties

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#### 9.2.7 Vapour pressure

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#### 9.2.8 Relative density

$> 600 \text{ kg/m}^3$  loose,  $> 1 \text{ kg/dm}^3$

#### 9.2.9 Solubility

##### 9.2.9.1 Water solubility

Not applicable

##### 9.2.9.2 Fat solubility (solvent-oil to be specified)

Not applicable

##### 9.2.10 Partition coefficient: n-octanol/water

Not applicable

##### 9.2.11 Viscosity

Not applicable

##### 9.2.12 Vapour density

Not applicable

##### 9.2.13 Evaporation rate

Not applicable

### 9.3 Other information

Physical properties and form of product will change if product is contacted with water. Wet pellets will brake down easily.

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<b>10.</b>	<b>STABILITY AND REACTIVITY</b>
<b>10.1</b>	<b>Conditions to avoid</b> Product must not be in contact with water, water drops or condensation water. In dusty spaces or during very strong handling open fires and sparking sources must be avoided.
<b>10.2</b>	<b>Materials to avoid</b> -
<b>10.3</b>	<b>Hazardous decomposition products</b> -
<b>11.</b>	<b>TOXICOLOGICAL INFORMATION</b>
<b>11.1</b>	<b>Acute toxicity</b> Non-toxic
<b>11.2</b>	<b>Irritation and corrosiveness</b> Not irritating or corrosive.
<b>11.3</b>	<b>Sensitisation</b> Extremely strong mechanical handling of pellets can sensitive reactions because on fine wood dust.
<b>11.4</b>	<b>Sub-acute, sub-chronic and prolonged toxicity</b> Not known.
<b>11.5</b>	<b>Empirical data on effects on humans</b> In closed or in storage where air ventilation is not adequate CO emissions are possible. CO-emissions will transmute to CO <sub>2</sub> in the atmosphere. <u>In closed pellet storage working is forbidden or working circumstances must be checked beforehand or alarming system must be installed.</u>
<b>11.6</b>	<b>Other information on health effects</b> -
<b>12.</b>	<b>ECOLOGICAL INFORMATION</b>
<b>12.1</b>	<b>Ecotoxicity</b>
<b>12.1.1</b>	<b>Aquatic toxicity</b> Non-toxic
<b>12.1.2</b>	<b>Toxicity to other organisms</b> Non-toxic
<b>12.2</b>	<b>Mobility</b>
<b>12.3</b>	<b>Persistence and degradability</b>
<b>12.3.1</b>	<b>Biodegradation</b> Biodegradable.
<b>12.3.2</b>	<b>Chemical degradation</b> Not known.
<b>12.4</b>	<b>Bioaccumulative potential</b> -
<b>12.5</b>	<b>Other adverse effects</b> -
<b>13.</b>	<b>DISPOSAL CONSIDERATIONS</b>
<b>14.</b>	<b>TRANSPORT INFORMATION</b>
<b>14.1</b>	<b>UN number</b> Not classified.
<b>14.2</b>	<b>Packing group</b> -
<b>14.3</b>	<b>Land transport</b>
<b>14.3.1</b>	<b>Transport class</b> -
<b>14.3.2</b>	<b>Risk code</b> -
<b>14.3.3</b>	<b>Name according to bill of freight</b> Woodpellet

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**14.3.4 Other information**

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**14.4 Sea transport**

**14.4.1 IMDG class**

Not classified

**14.4.2 Correct technical name**

**14.4.3 Other information**

**14.5 Air transport**

**14.5.1 ICAO/IATA class**

**14.5.2 Correct technical name**

**14.5.3 Other information**

**15. REGULATORY INFORMATION**

**15.1 Information on the warning label**

**15.1.1 Letter code of the warning symbol and indications of danger for the preparation**

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**15.1.2 Names of the ingredients given on the warning label**

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**15.1.3 R phrases**

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**15.1.4 S phrases**

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**15.1.5 Special regulations on certain preparations**

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**15.2 National regulations**

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**16. OTHER INFORMATION**

**16.1 List of the relevant R phrases**

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**16.2 Training advice**

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**16.3 Restrictions on use**

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**16.4 Further information**

Vapo Oy Tuotanto

**16.5 Sources of key data used**

1) Kierrätyspolttoainelaitoksen ATEX-turvallisuus. Osaraportti 1. Tilaluokitus ja sen mukaiset lisämääräykset. VTT Prosessit. PRO2/P5067/03.14.4.2003.

2) Pellettien pitkäaikaisvarastointi –kirjallisuustutkimus. M. Kallio. VTT Prosessit PRO2/P6016/04. 31.5.2004.

3) Vapo Oy Laboratorio.

4) Kotimaisten polttoaineiden turvallinen tuotanto ja käyttö. Loppuraportti, KTM/E, Sarja D:135, 1987.

5) Altisteet työssä, 7. Puupöly, Työterveyslaitos/Työsuojelurahasto, Helsinki 1991.

6) HTP-arvot 2005, Sosiaali- ja terveysministeriön oppaita 2005:10

7) Suojaa itsesi, Työturvallisuus, Mela 2002.

8) Vapo Oy, 2006, Pellettien uuteainetutkimus, Jyväskylän Yliopiston Soveltavan Kemian laitos.

9) Emission of volatile organic compounds from softwood pelets during storage. Forest Products Journal: Dec, 2005 issue. Arshadi ym.

10) Emission of Hexanal and Carbon Monoxide from Storage of Wood Pellets, a Potential Occupational and Domestic Health Hazard, 2004, Svedberg ym. British Occupational Hygiene Society. Oxford university Press Vol. 48, No 4, pp. 339-349.

**16.6 Information which has been added, deleted or revised**