Composition

Composition: Bar 72%, Dark chocolate 28%

Energy Bar, consisting of:

- Oats mix 40% (Oats gluten)
  - Sugar
  - Golden Syrup
  - Vegetable oil (palm fruit)
  - Salt
- Glucose syrup
- Almonds (tree nuts)
- Non-hydrogenated Vegetable fat (palm fruit)
- Hazelnuts (tree nuts)
- Soya fibre
- Water
- Sunflower seeds
- Invert sugar
- Sesame seed
- Sorbitol
- Salt
- Emulsifier (E322(soya))

Dark chocolate, consisting of:

- Sugar
- Cocoa mass
- Non-hydrogentated vegetable fat (palm fruit and shea seeds)
- Cocoa butter
- Flavouring
- Emulsifiers (E322 soya, E476))

Each 48g (1 bar) contains

864kJ	13.9g sugars	8.4g fat	3.6g saturates	0.4g salt

Glucose syrup

Glucose syrup is simply an added sweetener (often referred to as a simple sugar), added to make food taste better. It is created by breaking apart the strings of glucose molecules that make up starchy foods (like cornstarch, wheat, potatoes and rice). Even though it may be fat-free, it is a concentrated source of calories and offers very little nutritional value, which may lead to weight gain.

Golden syrup

Golden Syrup is a thick, amber-coloured form of inverted sugar syrup made in the process of refining sugar cane or sugar beet juice into sugar, or by treatment of a sugar solution with acid.

The free fructose content gives syrup a taste sweeter than that of an equivalent solution of white sugar; when substituting golden syrup for white sugar, about 25% less golden syrup is needed for the same level of sweetness.

Non-hydrogenated Vegetable fat (palm fruit)

Palm oil is the most popularly used vegetable oil in the world. It is derived from the fleshy part of the palm fruit, rich in vitamin E. It is remarkably versatile and is used in everything from snack food and shampoo to biofuel.

Hydrogenation is the process of bombarding an oil's fat molecules with hydrogen atoms, making it more dense and raising its melting point, so that the oil becomes solid at room temperature. An unfortunate side effect of this is the creation of trans fatty acids. **Partially hydrogenated oil** means that the hydrogenation process stopped short of a full solid, reaching a more creamy, semi-soft, butterlike consistency (e.g. margarine). Oils with saturated fatty acids have longer shelf lives and in baked goods provide a better texture and mouthfeel.

"Non-hydrogenated" means that the fat/oil is not treated with hydrogen to make it a saturated fat, and thus does not contain harmful trans fatty acids.

Palm oil or palm fruit oil is naturally approximately 50% saturated fat and 40% monounsaturated fat (oleic acid – the same type of fat in olive oil) and 9-10% polyunsaturated fat in the form of linoleic acid. Neither saturated nor monounsaturated fats are easily damaged by processing, leaving palm oil a healthy shortening to include in a snack item.

A high-fat diet, including excess use of palm oil, can cause low-grade inflammation that is linked to insulin resistance, obesity and other metabolic diseases that are partially mediated by our resident gut microbes.

Palm fruit oil can be a heart-healthy choice when consumed as part of a balanced diet. No oil is good for your heart when used in large quantities; in moderation, however, palm fruit oil delivers a balance of fats and some of the antioxidants needed to maintain a healthy heart

Soya Fibre

Soya fiber is made from the cell wall fiber and protein of the **soyabean** cotyledon (embryonic leaf). Soya fiber helps to provide the important health benefits usually associated with dietary fiber, including improved laxation and cholesterol-lowering ability.

Soya fiber is used in enteral nutrition products and some bakery goods.

Invert sugar

Invert sugar is a mixture of glucose (a simple sugar, circulating in our blood as blood sugar, produced during photosynthesis) and fructose (fruit sugar), obtained by the splitting of sucrose (common carbohydrate found in many plants, extracted and refined from either sugarcane or beet sugar for human consumption – i.e. sugar).

Compared to sucrose, *invert sugar* is sweeter and its products (glucose and fructose) tend to retain moisture and are less prone to crystallization, producing a smoother mouth feel in the products it is used, and ensuring a longer shelf life for the product.

One tablespoon of invert sugar contains 58 calories and 14.6 grams of carbohydrate in the form of sugar. It does not contain any fat, protein, fiber or cholesterol. It is not a significant source of any vitamins or minerals.
Other names include inversol, nulomoline, trimoline and colorose.

Invert sugar is used extensively in confectionary for preparations such as ganache, jellies, fudge, and taffy and in the preparation of sorbets and ice cream. It is also used as a sweetener in candies, frosting, beverages, biscuits and baked desserts.

Invert sugar is present naturally in honey and pure maple syrup, and it can lower the spread of bacteria, acting as preservative. But it is produced artificially for use in the food industry.

Sorbitol (E420)

Sorbitol is a sugar alcohol with a sweet taste acting as an emulsifier and sweetener in products. (An emulsifier stabilises a mixture so that the ingredients don't separate). It is a white powdery substance, mostly made from corn syrup (made from the starch of corn), but it is also found in apples, pears, peaches, and prunes, and in many stone fruits and berries from trees of the genus *Sorbus*.

Sorbitol is seen as a nutritive sweetener because it provides dietary energy. The human body metabolizes sorbitol slowly.

Sorbitol has approximately 60% the sweetness of sucrose (table sugar), and is often used in dietary foods (like diet drinks and ice cream), mints, cough syrups, and sugar-free chewing gum. It is also used in modern cosmetics as a humectant (to keep things moist) and thickener (such as mouthwash and toothpaste). Some transparent gels can be made only with sorbitol.

Gastrointestinal distress may result when food products that contain sorbitol are consumed, because it has a laxative effect.

Emulsifiers (E322 soya, E476))

*** E-numbers** are codes for substances that are permitted to be used as food additives for use within the European Union and Switzerland. The "**E**" stands for "Europe". Commonly found on food labels, their safety assessment and approval are the responsibility of the European Food Safety Authority. This does not mean that it is necessarily safe for your body.

E322 is Lecithin (in this case Soya Lecithin), a generic term used to refer to a variety of naturally occurring fatty compounds found in animal and plant tissues (yellow-brownish fatty substances). It is usually found in many whole foods such as cabbage, cauliflower, chickpeas, nuts, seeds, and eggs, and also in soyabeans, marine sources, rapeseed, cottonseed and sunflower seed.

Lecithin is used for smoothing food textures, dissolving powders (emulsifying), homogenizing liquid mixtures (making liquids equal), and repelling sticking materials (as used in non-stick cooking spray).

Soya Lecithin is actually a waste product from the manufacturing of soya oil. It is extracted from the sludge that is left after the soya oil undergoes a degumming process. To extract oil from the soya bean, it is necessary to use toxic solvents (such as hexane, used in the formulation of glues for shoes, leather products, and roofing), so those solvents are also contained in the Soya Lecithin (waste) product. In addition, commercial soya is almost always genetically modified (GMO), which means the Soya Lecithin also contains pesticide residue. Another concern is that the Soya Lecithin is bleached to transform the colour from a dirty brown to a light yellow.

Soya Lecithin is usually included on food labels as one of the last products, which means only minute (small) amounts will be consumed if the product is eaten

Some of the more commonly recognized side effects associated with consuming Soya Lecithin are issues like bloating, diarrhea, mild skin rashes, nausea and stomach pain. Soya is included in the group of the eight major allergenic foods. Rich, nutritious, brain building egg yolks are comprised of 30% lecithin!

E476 is Polyglycerol polyricinoleate, an emulsifier made from glycerol (glycerine - sweetener) and fatty acids (usually from castor bean, or soybean oil). In chocolate coating it is mainly used with another substance like lecithin to reduce viscosity (thickness) so that it flows more easily. It is allowed in chocolate up to a level of 0.5%. E476 is a yellowish, viscous liquid, and it is soluble in fats and oils and insoluble in water and ethanol.

Cacao butter

Cacao butter is a pale-yellow, edible vegetable fat extracted from the cocoa bean. It is used to make chocolate, as well as some ointments, toiletries, and pharmaceuticals. Pure, unfiltered cacao butter is loaded with protective fatty acids and antioxidants. It isn't heated to very high temperatures during manufacturing processes, which means it usually retains more of the healthy fats and other compounds found naturally in cocoa beans.

Cocoa mass

Cocoa mass refers to the first liquid stage of processing cocoa beans. Good fermented cocoa beans are cleaned, and usually subjected to an intense heat source for a short period of time (to loosen the shell from the nib of the bean). Grinding the nibs releases cocoa fat (butter), with the remaining cocoa solids held in suspension, producing a viscose liquid (the base ingredient for the manufacture of all chocolate).

Sodium

Sodium is an element that the body needs to work properly. Salt contains sodium. The body uses sodium to control blood pressure and blood volume, and ensures the proper functioning of muscles and nerves.

Sodium occurs naturally in most foods, the most common form of which is sodium chloride (NaCl - table salt). Milk, beets, and celery also naturally contain sodium.

Sodium is added to many food products. Some of these added forms are monosodium glutamate (MSG), sodium nitrite, sodium saccharin, baking soda (sodium bicarbonate), and sodium benzoate – not necessarily healthy choices!

The American Heart Association recommends no more than 2,300 milligrams (mgs) a day and an ideal limit of no more than 1,500 mg per day for most adults. This 48g bar contains 27mg of sodium (1/4 teaspoon salt = 575 mg sodium).