

U

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CHOCOLATE PRODUCTION

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Chanukah is a time of year when people enjoy getting together (safely!), playing dreidel and distributing those ubiquitous gold and silver chocolate coins. Have you ever wondered what goes in to making those chocolate coins kosher? In this article we examine how chocolate is manufactured and what halachic issues may arise.

A chocolate coin starts from a cocoa bean. Like coffee, cocoa beans come from many different countries with each region having its own distinctive flavor and taste. Cocoa beans arrive at a processing plant in large sacks and first have their shells removed. The inside of the bean that remains is called the cocoa nib and it is then heated in a large roaster. After that, the nib is ground until it becomes a thick liquid referred to as chocolate liquor. It should be noted that this liquor is pure cocoa nib and has nothing to do with alcohol or alcoholic beverages. While the chocolate liquor is sometimes sold "as is" for use in other products, it is more typically made into chocolate. To do so, the liquor is run through a hydraulic press that separates the cocoa butter (fat) from cocoa powder.

Then, the cocoa powder, cocoa butter, sugar, lecithin, and milk are mixed and put through several sets of rollers that smooth it out (or as referred to in the



industry, "refined"). Next, this chocolate is put through a conch. Conching is a heated process where a mixer and agitator evenly distribute the cocoa butter throughout the chocolate mixture.

The process also aids in improving the flavor, smoothness, and texture of the chocolate. Finally, the chocolate is poured into molds, cooled, and packaged.

A common question asked is whether milk chocolate uses liquid or powdered milk. The reason behind this question is that Rav Tzvi Pesach Frank zt"l has a famous *Teshuva* in *Har Tzvi* (*Yoreh Deah* 103) where he rules that the prohibition of *cholov akum* (milk that was not milked in the presence of a Jew) only applies when the milk is in its original form, but does not apply if the milk changed form. This is similar to the leniency mentioned in *Shulchan Aruch Yoreh Deah* 115:3 regarding butter. For those who follow the leniency of the *Har Tzvi*, this issue is very relevant to chocolate. Most chocolate companies only use



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powdered milk as the equipment is very sensitive to water (and milk has a high percentage of water in it). Nonetheless, some chocolates are made with liquid milk, and one cannot assume that all chocolates are made with powdered milk. (It is noteworthy that some *Poskim* maintain that once milk is in a chocolate state it is already a changed form and would automatically qualify for this leniency).

Another issue that arises is whether cocoa powder is considered cooked. This is important for those who wish to make hot cocoa on Shabbos. As mentioned before, the cocoa beans are roasted before they are ground. One cannot cook the cocoa in hot water poured directly from an urn

as that would be considered *bishul achar tzli* (cooking after roasting) which is forbidden on Shabbos. However, the hydraulic press used on the cocoa liquor (which is a liquid) operates at temperatures between 194°F - 212°F and is considered *mevushal* (cooked). Hence, all cocoa powder is considered *mevushal* and may be used on Shabbos.

Another issue related to the "cooking" of chocolate is *bishul akum*. The laws of *bishul akum* require a Jew's involvement in the cooking of certain foods. Is chocolate one of these foods? Cocoa beans are not edible raw, and chocolate is served at fancy affairs which should necessitate *bishul yisroel*. However, the general custom is not to require it. There are many answers as to why that is so. Rav Schachter *shlita* suggests that it is a combination of



Cocoa beans being placed in a roaster



View of the conching process

two *heteirim*: One is that chocolate is not served *l'lapeis bo es hapas* (the food does not come to enhance the bread). This is an opinion expressed by many *Rishonim* and *Poskim*, although we do not generally rely upon it. There is also a *psak* from Rav Moshe

Feinstein *zt"l* (as quoted by Rav Nota Greenblatt *shlita*) in which he rules that there is no prohibition of *bishul akum* on food made in commercial factories. As the factory uses specialized equipment to make the product and one could not do so at home, the reason behind *bishul akum* does not exist (similarly see *Shu"t Minchas Yitzchak* 3:26 and 10:67). While the OU does not rely on any of these *heterim* alone, we can combine them to exempt chocolate from *bishul yisroel*.

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TRIVIA

Test your knowledge of all things chocolate or chocolate related.

1) WHAT PRODUCT IS THE COMBINATION OF WATER + VEGETABLE OIL + LECITHIN + BETA CAROTENE + ARTIFICIAL FLAVOR?

- a. Vegetable shortening
- b. Orangeade
- c. Coffee creamer
- d. Margarine

2) WHAT PRODUCT IS THE COMBINATION OF COCOA POWDER + LECITHIN + VANILLIN + SUGAR + COCOA BUTTER + CHOCOLATE LIQUOR?

- a. Chocolate syrup
- b. Chocolate covered nougat bar
- c. Chocolate ice cream
- d. Chocolate chips

3) WHICH COUNTRY IS THE LARGEST PRODUCER OF COCOA BEANS?

- a. Cot'e d'Ivoire
- b. Belgium
- c. Ghana
- d. Brazil

4) WHAT BRACHA DO YOU MAKE ON EATING CHOCOLATE?



Answers can be found on page 4.

The **Ingredient** PANEL

Ever wonder what all those additives in your food are? Look no further! The OU helps explain what some of those strange sounding words actually mean.



Lecithin granules

This issue we examine a few ingredients used in chocolate production:

LECITHIN – A byproduct of the crude soybean or sunflower oil refining process. Lecithin functions as an emulsifier, antioxidant, stabilizer or lubricant, and is found in chocolate coatings and cooking sprays, among other products. It is often standardized with fatty acids and requires proper *hashgacha*.

VANILLIN – is derived from the waste material of wood pulp and is the primary component of vanilla. Surprisingly, a large amount of vanilla flavor does not come from vanilla beans. Vanillin does not pose very many kashrus issues.

Consumer Conundrums

I HEARD THAT SOME CHOCOLATE CHIPS ARE LISTED AS DAIRY (OU-D), BUT ARE ACTUALLY DAIRY EQUIPMENT (DE). CAN I TELL IF A PRODUCT IS DAIRY OR DAIRY EQUIPMENT (DE) BY CHECKING THE INGREDIENT PANEL?

If a product lists dairy additives on the ingredient panel, it is obviously dairy. Some common dairy ingredients to be aware of include milk, yogurt, cheese, cream, butter, whey, lactose, casein, and [sodium] caseinate. However, a product may contain a dairy ingredient that is not listed on the ingredient panel such as those present in "natural and artificial flavors". Furthermore, due to a very strong dairy lobby, the FDA forbade the use of the word "dairy" as a descriptive term when the dairy content is below a certain level. For



example, some margarines and coffee whiteners may contain dairy ingredients even if labeled non-dairy. Also, to be a true DE product, the equipment must be properly cleaned of residue after dairy production, and that level of cleanliness is sometimes difficult to maintain and guarantee. Due to these concerns, it is not entirely possible to determine the dairy status of a product based solely on the listed ingredients.

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Another answer given is that *bishul akum* applies only to foods that play a primary function at a fancy meal. Though chocolate may be

served at a state dinner, it is consumed in small amounts, and the chocolate plays a minor role. For example, small chocolate pieces may be placed on the table to add a touch of elegance or a taste of sweetness. Therefore, *bishul akum* would not apply.

The most common kashrus issue with chocolate manufacturing is how to make pareve chocolate. Chocolate companies typically produce milk chocolate and dark chocolate on the same lines. While the ingredients for a pareve chocolate are not hard to come by, kashering the equipment presents a challenge. Typically, the way one would kasher this equipment would be with *hagalah* which requires boiling hot water. As mentioned previously, the equipment used for chocolate is extremely water-sensitive and companies will not allow water to be introduced. The Rama (*Orach Chaim 452*) allows one to use other types of liquid *b'dieved*. In fact, chocolate companies themselves use cocoa butter to flush their equipment. However, Rav Moshe Feinstein writes in a *Teshuva* in *Yoreh Deah (1:60)* that one cannot use fats to kasher equipment, and only liquid oils can be used. Therefore, chocolate plants are typically kashered with oil. It is important to note that even oils can be solid. For example, palm and coconut oil are solid at room temperature. Therefore, only oils that are liquid at room temperature (such as soybean, canola, and sunflower oil) can be used for kashering.

As with most processed food, there is a lot of *halachic* thought and oversight that goes into ensuring your food is kosher! Enjoy your chocolate coins! A *lichtige* Chanukah!

