# Melting chocolate: fact sheet

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Did you know chocolate begins to melt at a temperature lower than the temperature of the human body? That’s why when you put some in your mouth it begins to melt.

So what is the melting point of chocolate? There isn’t an exact point. There’s a **range**, because it’s a **mixture**.

## What is chocolate made from?

**Cocoa** is the simple answer.

* Cocoa comes from the seed pods of cocoa trees.
* The seed pods contain beans, which are fermented, roasted and processed.
* Other ingredients, such as **sugar and milk**, are added to make the finished chocolate.
* The beans from the cocoa tree contain roughly 50% **cocoa butter**, which is **chocolate’s main ingredient**.
* Cocoa butter is made up of **three fats** in roughly equal amounts. The **ratio of these fats** strongly affects chocolate’s **melting range**.

### Did you know …?

Different types of chocolate melt over different **temperature ranges**, because they contain different amounts of ingredients.

## Crystallisation

The **fats in cocoa butter** can form **six different types of crystal**, which melt at different temperatures:

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| --- | --- | --- |
| **Crystallisation type** | **Melting point** | **Taste notes** |
| Type I | 17.3˚C | Soft, crumbly |
| Type II | 23.3˚C | Crumbly, melts easily |
| Type III | 25.5˚C | Firm but melts easily |
| Type IV | 27.3˚C | Firmer but melts easily |
| Type V | 33.8˚C | **Best for eating**: melts near body temperature, crisp snap |
| Type VI | 36.3˚C | Too hard |

The melting range of chocolate depends on the types of crystals that chocolatiers create in the mixture.

### Did you know …?

Chocolate with Type VI crystals is sometimes used to make **heat-resistant** chocolate for army survival packs.

## Tempering

To make chocolate melt in your mouth, chocolatiers try to maximise the amount of Type V crystals in their creations using a process called **tempering**. This involves:

* **Heating** the chocolate to about 40˚C to make sure all the various crystal forms are melted.
* **Cooling** it gradually to 28˚C to give a mixture of Type IV and Type V crystals.
* **Heating it again**. This time to 32˚C to melt the Type IV crystals
* Then pouring it into moulds where it **sets**.

## Melting ranges

The mixture of ingredients in chocolate recipes affect the melting point of the finished product. For example, adding milk to dark chocolate to make milk chocolate lowers the melting point.

|  |  |  |
| --- | --- | --- |
| **Chocolate type** | **Percentage of cocoa solids** | **Melts at …** |
| Dark | 85%  | 46–48˚C |
| Milk | Between 20 and 50%  | 40–45˚C |
| White | 0%, roughly 20% cocoa butter | 37–43˚C |

### Did you know …?

Dark chocolate contains theobromine, which is **toxic for dogs**. So don’t give them any!