

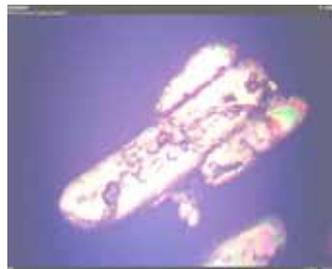
## The Quality of MSM (Methylsulfonylmethane)

Bergstrom Nutrition is the first and only manufacturer of MSM in the United States of America. Bergstrom Nutrition has given its top quality MSM two different brand names: **OptiMSM®** for humans and **PurforMSM®** for animals.

Both qualities are identical, and considered the purest and most outstanding MSM available on the market today. They are in all aspects superior to MSM produced in plants in countries like China and India. Such MSM products are usually without brand name and anonymous, which makes it difficult to find out which company is the actual manufacturer.

**OptiMSM®** and **PurforMSM®** make a true difference by the highly sophisticated purification processes, including a **four-fold distillation**. The multiple distillation removes all impurities, and leaves only pure MSM behind. The pure MSM obtained comes with certificates of analysis that guarantee the absence fungi, yeasts, bacteria and organic impurities. The concentrations of heavy metals, an important potential contaminant, is specified to be absent near the analytical levels of detection.

Mercury (Hg)	: < 0,001 ppm (mg/kg)
Cadmium (Cd)	: < 0,005 ppm (mg/kg)
Lead (Pb)	: < 0,01 ppm (mg/kg)



The image on the left shows crystals **OptiMSM®** after four-fold distillation. The crystals are round shaped and do not show any sign of impurities. The image on the right shows a crystal MSM obtained after 'purification' by the so-called 'crystallization method', often used by Chinese and Indian manufacturers. Not only has the crystal a different shape, it also shows clear traces of impurities. These traces may be organic impurities, but could also be heavy metals.

Manufacturers in China and India usually 'purify' their product using the so-called cheap **Crystallization Method**. When this method is used, the MSM is dissolved in water and dried. Dissolving in water and drying is not really a 'purification', though it is often called as such. All impurities present do not go away, but stay present. Even worse, the water used usually also contains all kind of impurities that end up in the MSM crystals after drying.

Such MSM comes with certificates that usually do not guarantee the absence of fungi, yeasts and bacteria. The levels of heavy metals are usually not individualized, but shown as a generic group to guaranteed levels up to <20 ppm or <10 ppm.



The image in the right shows **OptiMSM®** after distillation. It is pure and sparkling white pure, i.e., free of contaminants. The image on the left shows the contaminants that stay behind in the distillation column, mainly heavy metals. These contaminants are all still present in the MSM of manufacturers 'purifying' their MSM using the crystallization method. Bergstrom Nutrition is the only company in the world using the distillation method to purify the MSM.

### DISTILLATION: HOW DOES IT WORK?

Bergstrom Nutrition uses the expensive distillation method to purify MSM. During this process, MSM is heated until boiling temperature (238°C). The MSM vapour is cooled and crystallizes back into MSM crystals. By repeating this step four times, MSM crystals of the greatest pureness are obtained:

1. All contaminants with lower boiling temperature evaporate before the MSM. These contaminants mainly are the organic compounds present.
2. All contaminants with higher boiling temperature stay behind in the distillation column. These contaminants are mainly heavy metals:

	Boiling temperature
Lead (Pb)	: 1740° C
Cadmium (Cd)	: 765° C
Arsenic (As)	: 613° C
Mercury (Hg)	: 356° C

**Conclusion: The heavy metal contamination is guaranteed up to 20.000 times lower in OptiMSM® and PurforMSM® compared to other MSM.**