Questions and Answers for member company employees concerning the classification for titanium dioxide as suspected of causing cancer by inhalation, October 2019

The European Commission has decided to classify a key raw material used in member factories as a category 2 carcinogen by inhalation, a decision which will come into force in mid-2021 if it is passed into law. We, and the whole industry, believe that titanium dioxide is a safe, inert raw material, but that care should be taken when handling dust, to ensure limited exposure to the lungs, as is the case with all raw materials used.

Warning
H351: Suspected of causing cancer (inhalation)

Q 1: I heard titanium dioxide gives you cancer. Is it true?
Answer: No, the category 2 classification means that it is “suspected” of causing cancer, but there is no evidence it does give humans cancer. The ruling is based on studies carried out on rats, where titanium dioxide in its pure powder form was inhaled in excessive quantities over a long period of time, leading to significant impairment of particle clearance mechanisms in the lung of rats. This effect would have occurred with any similar powdery substance – it is a dust effect, and not linked to the chemical properties of titanium dioxide. Workers are already protected to prevent dusts being inhaled in the workplace. Independent research involving over 24,000 employees who handle titanium dioxide on a regular basis demonstrates that there is no elevated risk of lung cancer.

We are convinced that using titanium dioxide in the production of paints, coatings and printing inks will not damage your health even if you handle the substance for many years as long as you comply with the health and safety instructions.

Q 2: Which occupational health and safety measures provide the best protection against the potential negative effects from titanium dioxide?
Answer: First of all, there is clear and strict regulation on fine dust limits to which we comply consistently and responsibly. And we have extensive occupational health and safety measures in place that also include the proper use of respiratory protective devices or regular room ventilation at fixed intervals. Other technical improvements in modern production processes for colours, inks and coatings such as the use of semi-closed systems for feeding titanium dioxide into the system, air suctioning at infeed stations and the use of large containers to minimise the amount of fine dust ensure additional safety.

Q 3: Will the company introduce additional protective measures as a precaution?
Answer: No, workers handling titanium dioxide will have to use the same personal protective equipment, as when handling other powders, which are already sufficient to ensure limited dust exposure.

Q 4: What measures does a manufacturing facility have to provide protection against adverse health effects from exposure to hazardous substances?
Answer: Some facilities have closed dosing systems, where there is no exposure to titanium dioxide. In the case of manual handling, production employees are protected by adequate personal protection equipment.

Q 5: I have been working with titanium dioxide for the past 10 years. Today's strict occupational health and safety measures did not exist in the past. Could my health have been damaged by titanium dioxide exposure over the course of these years?
Answer: No, experience has shown that titanium dioxide does not damage human health even if people are exposed to the substance for many years. Independent research involving over 24,000 employees who handle titanium dioxide on a regular basis have shown that there is no elevated risk of lung cancer. Experiments where cancer was found were based on tests with rats during which the animals were exposed to unrealistically high amounts of titanium dioxide dust (overload). This prevented the natural clearance system of their lungs to effectively remove the respired dust. The tumours seen in rats result from an excess of fine particles in lungs and not from any toxic nature of the raw material titanium dioxide. Such effects were observed in a study when the rats were exposed to levels of titanium dioxide that would mean approximately 40 times the maximum a worker might be exposed to in his job.

Q 6: Should we take precaution when handling end products?
Answer: Once titanium dioxide is mixed into paints, coatings, printing inks or other products of daily use, it cannot make its way into the lung as dust. For this reason, there is no exposure during the handling of end products and no precaution is needed.

Q 7: The proposed classification is for the dust of titanium dioxide which is one of the main ingredients used in paints. What about the dust that comes from sanding old paint layers? How dangerous is that?
Answer: Sanding of an old paint layer creates paint dust; however, it does not result in free titanium dioxide particles. Such sanding dust is a mixture of all solid ingredients in the paint and are held together by a polymer structure in which the titanium dioxide particles are firmly embedded. As a general precaution one should always protect oneself from the risk of inhaling dust whether that be sanding dust or sawing dust etc. Using respiratory filters (dust masks) is strongly recommended.

CEPE is the European Council of the Paint, Printing Ink and Artists' Colours industry
EUPIA is the European Printing Ink Association, a sector group of CEPE
EuACA is the European Artists' colours Association, a sector group of CEPE