湘园化工
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Comments on the draft recommendation of substances for inclusion in Annex XIV

Ⅰ. The emergence of the MOCA

As an industrial product, MOCA from its birth until now has been over 60 years, just like a person's life, MOCA also can say to experience wind storm rain.

With the development of industry technology, MOCA has been using around the world because of its excellent performance, and has become the most ubiquitous diamine chain-extender in the world. Although many researchers have been trying their best to find alternatives since it came into being, the best cost effectiveness product by far is still MOCA.

Ⅱ. On the use of MOCA

Being natural rubber's substitute, polyurethane (Synthetic rubber) fills the gap of natural rubber resource, which can meet people's demand unlimitedly. Because its Young's modulus between rubber and plastics, PU product featured with wear resistance, oil resistance, tear resistant, corrosion resistance, radiation resistance, good cohesiveness, high elasticity and excellent shock resistance, etc. have applied very widely in many fields. Industries have involved car manufacturing, construction, textile industry, electronic industry, food industry, mining industry, oil, chemical industry, military, steelmaking, paper industry, railroad, sports field, etc. All these features make PU elastomers' application field is getting more and more extensive.

As the chain extender for polyurethane elastomer, MOCA's easy operation, excellent performance, stable function, low cost characters make those elastomers cured by MOCA can satisfy people's wide requirements. Because of this, MOCA gains popularity and being widely used in the world. It has gradually influenced every aspect of human life.

Ⅲ. Opinions on toxicity of MOCA

MOCA is prepared with o-chloroaniline and formaldehyde as materials. pH value: 7.0-7.3, Melting point ≥98℃.

We, Suzhou Xiangyuan Special Fine Chemical Co., Ltd. (Hereafter called Xiangyuan) has been engaged in MOCA manufacturing more than 20 years. We have extensive R&D and manufacturing experiences. Our MOCA production capacity has increased to 10000 tons/year by 2011 from 10 tons per year in 1992. Among 72 employees in our production department who have been working at the forefront of MOCA production and exposure to MOCA, 6 of them have been working with our company for 20 years, 12 of them more than 15 years, and 15 of them more than 10 years and 19 of them more than 5 years. The owner of this company has been engaged in research, production and marketing of MOCA for almost 30 years. But none of them has bladder cancer.

Experts have debated MOCA's toxicity for decades, but so far, there's still no confirmed evidence showing that MOCA causes cancer to human beings. Practice is the sole criterion for judging truth. Up to now, there is no bladder cases identified among workers who exposure to MOCA in MOCA factories in Japan, Taiwan and Mainland China.

We all know that cancer can be caused by many factors like gene, unhealthy life style and environmental factors, etc. Gene is the key point and deciding factor. There are so many bladder cancer patients who never worked with MOCA or OCA and how can one explain it. There are also thousands of carcinogenic substances. The most familiar substances are like methanol, ethanol and tobacco, etc. Ethanol can make wine, people worldwide in a prodigious number drink. Excess in drinking can induce stomach cancer, liver cancer and oesophagus cancer. Smoking may lead to cancer; there are so many smokers around the world, why not to uproot tobacco? The answer is "For the requirement of living of the mankind".

MOCA is also a necessary material for polyurethane industry and its application fields have been developed continuously over the last decades. So far, people still have not found an alternative better than MOCA. Had it been forbidden just because some so called experts conjecture based on chemical structure, it is unfair.

People can't live without chemicals, there are hundreds of thousands of chemicals in the world and how many are tonics?

All chemicals can be harmful to humans if it is not operated according to safety precaution and operational guidance and to handle it properly, the hurts differ only in degree. MOCA has been using for more than half a century; people know how to handle it well, how to avoid any potential risks. Of course, we all will not give up our efforts to develop other new, so called safe materials, Even a new material is developed that can be alternative; it still needs a long time to be inspected by practice. We think the key point still at this moment is how to improve safety production standards, how to guide people to use MOCA in a better, safer way. As far as we know that many companies such as Chemtura and Baule(Bayer) have done a lot to teach their downstream users to use MOCA in the right way, and Chemtura even did a lot of tests to find the best packaging materials (PET 12/LLDPE 75) for inner bag to prevent MOCA dust transmits to outside.

As a manufacturer, even we have different opinion on MOCA toxicity from Europeans, from the view of Responsible Care, Xiangyuan have invested heavily in improving the production facilities and using advanced technology to protect human health. We adopted automatic production technology from the beginning of production to the end of packaging. We minimized the possibilities that workers directly contact materials.

Ⅳ. Conclusions

1. Practice is the sole criterion for judging a substance, and its contribution to human beings. MOCA is the most widely used material with highest cost performance ratio in polyurethane elastomer in the world,
2. Over decades of deputes on MOCA's toxicity, there is still no firm evidence to prove MOCA causes cancer to human beings.
3. MOCA is a substance that has been using more than half a century. With improved technology and equipments, the handling method, safety precaution and operational guidance have been

improved dramatically. Based on people's knowledge of this material, the health risks of using MOCA are much less than most of the chemicals in the world.

4. Although people have been searching alternatives for years, there is no result as of today.

In view of the above information, we believe that ECHA can make the correct decision fairly, objectively and scientifically to benefit humans and polyurethane industry worldwide.

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