

## **Study of Benzil Dimethyl Ketal on acute oral, acute dermal and genetic toxicities**

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Benzil dimethyl ketal (BDK) is a chemical that used in the photo-curing system as a photoinitiator. Because the photocuring system is a environmentally friendly process, its application to the related industrial fields is in the increasing pattern. However, although it was expected that the possibility of exposure to human is also increased, there was no study about toxicological evaluation. Therefore, several toxicity tests were performed in this study to evaluate the health effects of the chemical. As the results, it was revealed that the risk of acute toxicity is relatively low because of >5000 mg/kg of LD50 in acute oral toxicity and 2000 mg/kg LD50 in acute dermal toxicity. However, the genetic toxicity was not clearly confirmed. Although it was shown that the bacterial mutagenic potential was negative in bacterial reversion assay, BDK showed the positive result in *in vitro* chromosomal aberration assay. The major chromosomal aberration type caused by BDK was the structural aberration. The QSTR data were practically consistent with the experimental results. However, further work like *in vivo* micronucleus assay is needed to confirm the genotoxic effect of BDK.