

Low Tox Method - Assignment 2

Response ID:57 Data

1. Ingredient research skill-building

1. What's your name?

Lena Rosenthal

2. What chemical have you been given to research?

Cellulose nitrate

3. How would one describe this chemical or group of chemicals from a structural point of view?

Cellulose nitrate is a nitric acid ester of cellulose. It is build through nitrating cellulose in presence of nitric acid. Alternatively, it also forms in presence of a mixture of nitric acid and another acid as powerful nitrating agent, like hydrochloric acid or sulfuric acid. It has a very high flammability.

4. Is there anything in the research (provide study links or articles written by authorities on the subject either journalists or scientists) that suggests this chemical can cause harm?

Cellulose Nitrate in cosmetics (mainly the nail products) has been proclaimed safe so far.

<https://pubmed.ncbi.nlm.nih.gov/27383197/>

https://www.cir-safety.org/sites/default/files/nitrocellulose_faa-final.pdf

Nevertheless there are studies that state cellulose nitrate might be the source of carcinogenic nitrosamine in nail polish. But this topic definitely needs more research.

https://www.kantonslabor.bs.ch/dam/jcr:cb1159e9-b594-418a-ad43-154188a3fcbd/Nagellack-2017_en.pdf

Cellulose nitrate is very flammable, easily ignited and difficult to distinguish. It burns vigorously and toxic oxides of nitrogen form during combustion. Additionally there is a high risk of explosion. This topic was very relevant when nitrocellulose was still used in cinemas and it still is relevant today for film archives.

<https://pubchem.ncbi.nlm.nih.gov/compound/Nitrocellulose>

5. Based on the research you gathered, to what level would you feel comfortable using a product with this ingredient in it?

To be safe, I would do a research if this product has been tested for nitrosamine before using it.

6. Where might we find this chemical appearing in our day to day lives?

It is used as:

- Lacquer (Nitrocellulose lacquer)
 - Nail polish
 - Glue
 - Gunpowder
 - Explosives
 - Fireworks
 - Spray plaster
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7. If we were to stop using products with this chemical, what could we use instead? A couple of brand ideas that omit that ingredient or DIY recipe links to support the transition for people. (If you've found it to be safe and supported that with evidence, just pop N/A here")

There are natural cosmetics brands that don't use cellulose nitrate like the brand Logona.
