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A survey on safety of Nanofluid use

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nano

uptake^m

Motivation – A small Example





Silica crystals obtained from drying highly concentrated water-based silica nanofluid

Pure empirical experiences showed that even double rubber gloves do not protect fingers from these spiky needles.

Courtesy ILK Dresden

Outline

- The survey Some statistics
- The survey Some relevant information
- The survey Main Questions
- Main Answers
- Conclusions



The Survey – Some Statistics

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COST Action CA15119 NanoUptake survey carried out in Oct. 2018

- Survey sent out to about 220 individuals.
- Participating institutions from 19 countries.
- 68 participants filled the survey.
- 45 questions divided into 6 sections.



Countries Involved





Summary

Total	19
Non-European Countries	5
European Countries	14

Thanks to all the partners who did all the work to keep this project going. Thanks also to the sponsors.

The Survey – Some Statistics

Profile distribution based on countries

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Countries

Number of participants per profile

The Survey – Some relevant information

Routes of exposure to nanofluids



The Survey – Main questions

- How the risks related to nanofluids are estimated?
- Which measures are undertaken to handle the risks?
- Are there special regulations for treating nanoparticles/ nanofluids in laboratories?



Main Answers

How the risks related to nanofluids are estimated?

Monitoring of workplace for nanofluids



Main Answers

Number of responses

Which measures are undertaken to handle the risks?

Methods of nanofluid waste disposal



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Countries

Main Answers

Are there special regulations for treating nanoparticles/ nanofluids in laboratories?



Existence of health and safety regulations

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28

32

60

Countries

Conclusion

- NanoSafety
- No specific rules and literature for nanomaterials safe handling.
- Nanofluids treated as comparable chemical risky liquids.
- Careful handling based on safety rules as used for similar chemical substances.
- However, only 6 to 7% monitor workplace for nanoparticles /nanofluids and only 28% provide special training to employees.
- Research character possibly the reason of the current findings.
- Industrial use demands for proper handling standards.

