

Ice-prevention substances – effectiveness and environmental effects the International Cycling Safety Conference 2014

V. Wallqvist¹, A. Dahlman², A. Etana³

¹ Chemistry, Materials and Surfaces
SP Technical Research Institute of Sweden
Drottning Kristinas v. 45, 114 28 Sthlm, Sweden
e-mail: viveca.wallqvist@sp.se

² Chemistry, Materials and Surfaces
SP Technical Research Institute of Sweden
Drottning Kristinas v. 45, 114 28 Sthlm, Sweden
e-mail: Annika.dahlman@sp.se

³ Department of Soil and Environment
Swedish University of Agricultural Sciences
Lennart Hjelms väg 9, 750 07 Uppsala, Sweden
e-mail: ararso.etana@slu.se

ABSTRACT

In bike lane maintenance a recent development in Sweden has included the introduction of vehicles having the possibility of simultaneously swipe and apply salt from solution. This method has gained a large positive response from the cyclist community in the cities where it has been tested. However, the salt used most commonly today has negative environmental effects and many regions have banned the use of salt completely.

We have studied alternative de-icing substances with focus on application from solution, effectiveness and environmental impact.

Keywords: ice, cyclists, vulnerable road users, maintenance.

REFERENCES

- [1] B. M. Gerbino-Bevins, C. Y. Tuan, M. Mattison, "Evaluation of ice-melting capacities of de-icing chemicals" in *Journal of Testing and Evaluation* (2012), pp. 952-960
- [2] A. Etana and T. Rydberg, "Inverkan av vägsalt (NaCl) på jordens aggregatstabilitet och risker för fosforförluster från åkermark" in SLF project report 0233057 (2003).
- [3] Y. Li, J. A. Hsu, G. Fernie, "Aging and the use of pedestrian facilities in winter-the need for improved design and better technology" in *Journal of urban health : bulletin of the New York Academy of Medicine* (2013), pp. 602-617