

# Alternative liquid spreading agent



Alternative spreading agent

## Sodium chloride is main de-icer!

On several roads alternatives necessary

Problems with potassium carbonate

- Cannot be stored over summer
- Rather expensive
- Does not fully meet environmental expectations



## Project Goals

### Goal:

Find an alternative to potassium carbonate

Analyse the market and and examine suitability

Check the effectiveness of products independently

### Not goal:

Replace salt/brine

Laboratory tests  
Laboratory Vienna University of Technology

## Thawing performance

How much ice can be thawed with the spreading agent?

What freezing point does the spreading agent have?

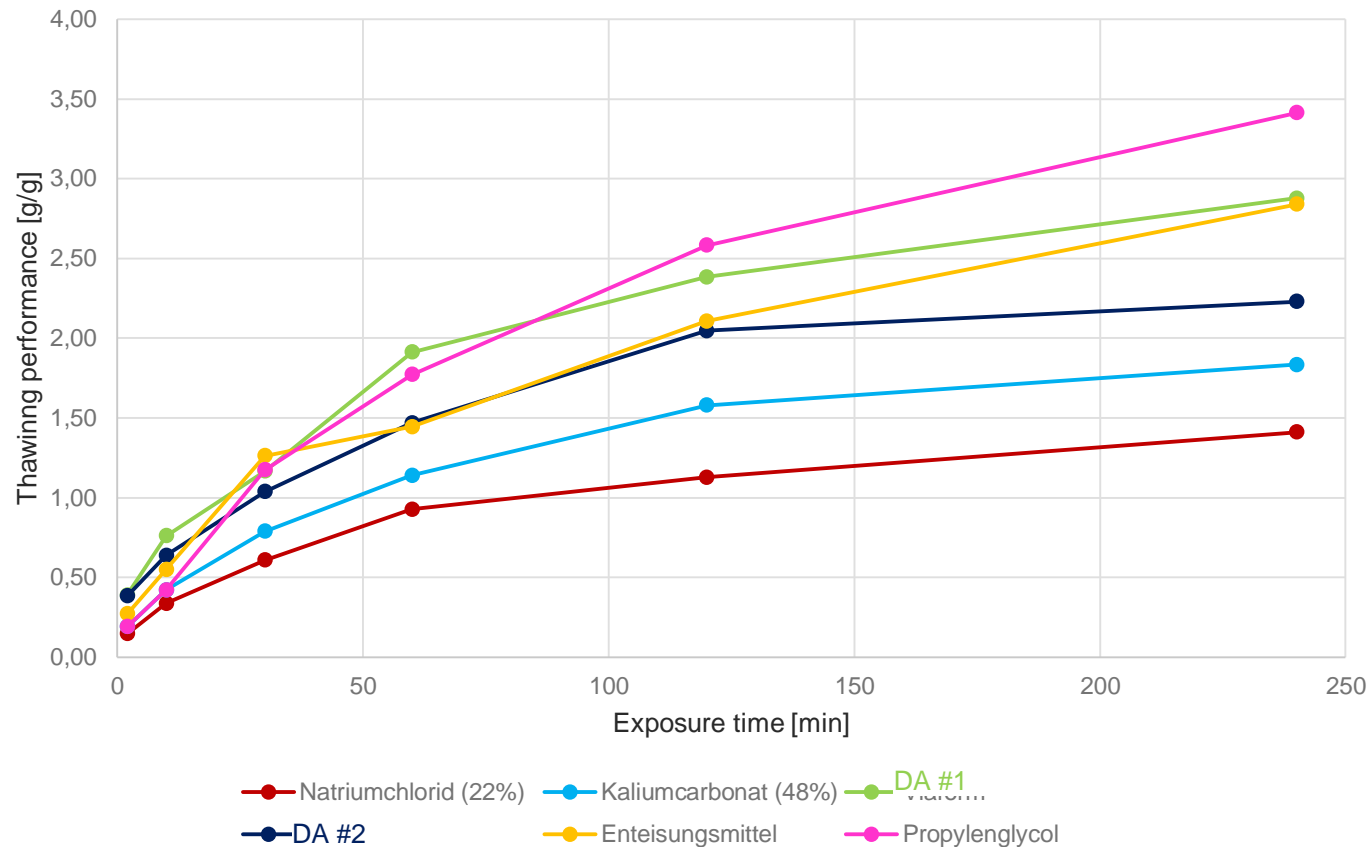
How fast is the thawing-reaction?



## Thawing performance (-2.5°C)

The thawing performance of DA #1 and DA #2 at -2.5°C is significantly higher than the performance of sodium chloride and potassium carbonate.

Thawing performance -2,5°C

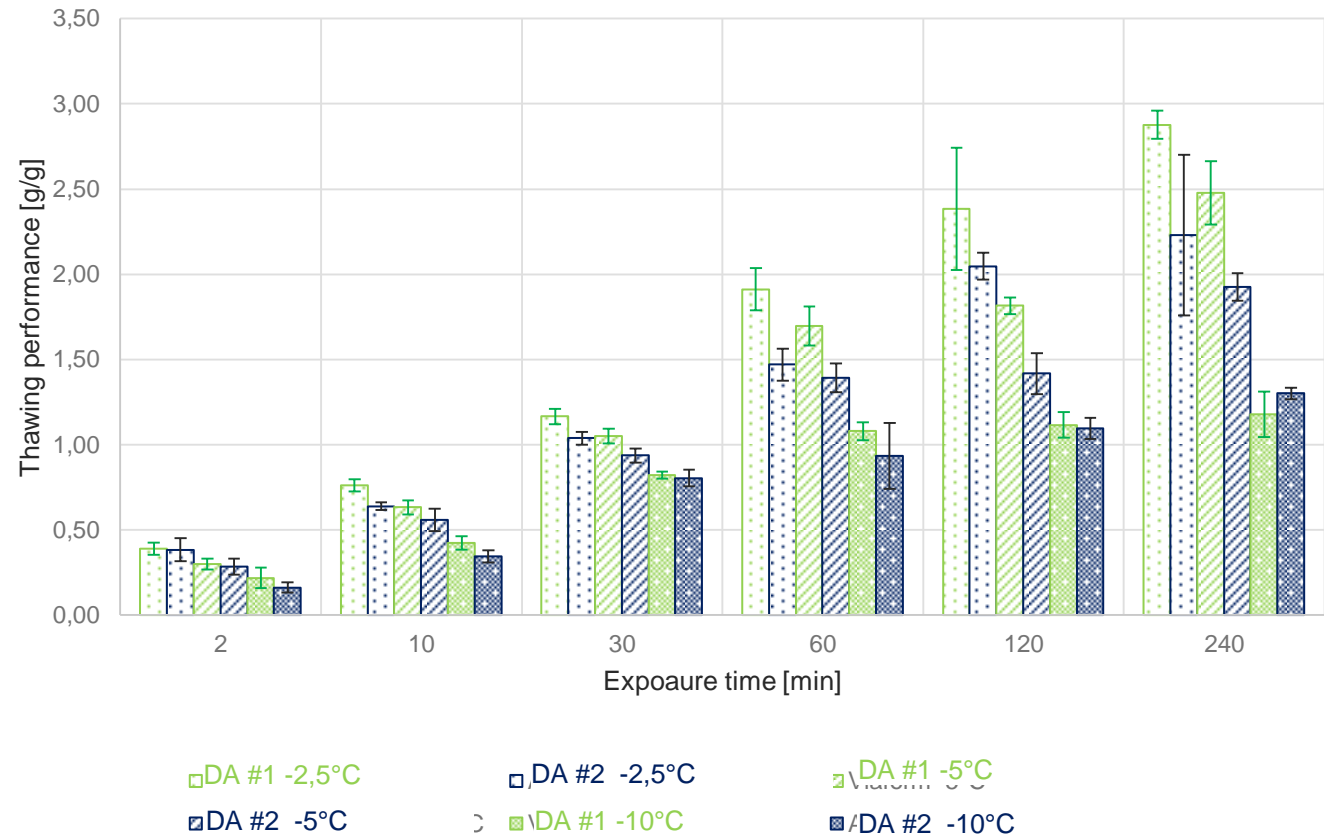


## Thawing performance

DA #1 a little bit better

No difference at very low temperatures

Thawing performance [g/g] vs. Exposure time [min] and Temperature [°C]



Field measures  
GripTester

## Skid resistance and effects

Does the spreading on the road negatively affect the skid resistance?

Are there any other problems with practical use?



# Field measures

Auhof with measuring devices from TU Wien

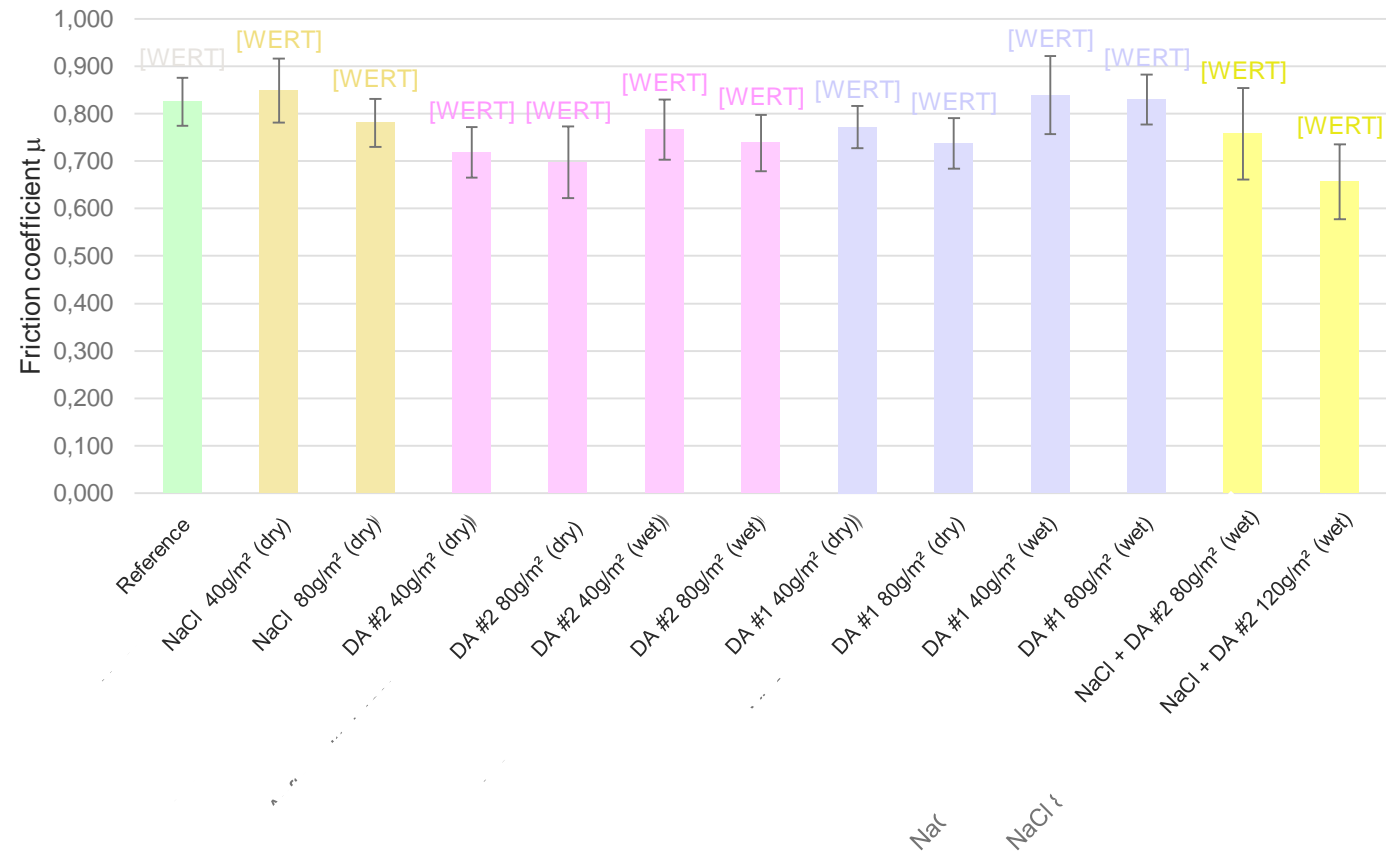
## Friction Values

Problematic friction below 0.38

All measured values above 0.65

No negative effect on friction

### Grip testing attempts





Conclusion

## Final Conclusion

Thawing performance: Good

Freezing point: Good

Friction: Good

Price: Expensive

Environment: Good, no data

Further testing in real operations needed





Thank you

Stadt  
Wien



Abfallwirtschaft,  
Straßenreinigung  
und Fuhrpark

