



SAFETY DATA SHEET

Aviform® L50



SECTION 1: Identification of the substance/mixture and of the company/undertaking

Revision date 08.03.2011

1.1. Product identifier

Product name Aviform® L50
 Chemical name Potassium formate
 REACH Reg No 01-2119486456-26-0006
 CAS no. 590-29-4
 EC no. 209-677-9
 Article no. PZ022L000

1.2. Relevant identified uses of the substance or mixture and uses advised against

Product group De-icing
 Use of the substance/preparation De-icing of airport runways and taxiways
 Relevant identified uses ERC4, ERC8A, ERC8D
 PC4
 PROC7, PROC5, PROC8b, PROC9, PROC15, PROC3, PROC11, PROC8a
 SU3, SU22

1.3. Details of the supplier of the safety data sheet

Manufacturer

Company name ADDCON Nordic AS
 Office address Tormod Gjestlands veg 16
 Postal address Postboks 1138, 3905 Porsgrunn
 Postcode 3936
 City Porsgrunn
 Country NORWAY
 Tel +47 35 56 41 00
 Fax +47 35 56 41 01
 E-mail oyvind.oskarsen.due@addcon.com
 Website <http://www.addcon.com>
 Enterprise no. 988 774 677

1.4. Emergency telephone number

Emergency telephone ADDCON Nordic AS:+47 35 56 41 37/ Mob +47 48 26 91 48

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification according to Regulation (EC) No 1272/2008 [CLP/GHS] On basis of test data

2.2. Label elements

R phrases The product does not require labelling.
 S phrases S26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
 S36/37/39 Wear suitable protective clothing, gloves and eye/face protection.

| | |
|--------------------------|--|
| Composition on the label | Potassium formate: ~ 50 %, Water: ~ 50 %, Corrosion inhibitor: < 1 % |
| Precautionary statements | P280 Wear protective gloves/protective clothing/eye protection/face protection. P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. |
| EEC-directive | REGULATION (EC) No 1907/2006 REACH article 31 Requirements for Safety Data Sheets, and Annex II guide to the compilation of safety data sheets. CLP-Regulation (EC) No 1272/2008 Classification and labelling have been performed according to EU directives 67/548/EEC, 1999/45/EC, including amendments and the intended use |

2.3. Other hazards

| | |
|-----------------------|---|
| Description of hazard | The product is neither subject to classification nor classified as environmental hazard. This is based upon the regulation requirements in force, as well as OECD studies. |
|-----------------------|---|

SECTION 3: Composition/information on ingredients

3.2. Mixtures

| Component name | Identification | Classification | Contents |
|----------------------------|--|----------------|----------|
| Potassium formate | CAS no.: 590-29-4 EC no.: 209-677-9 Registration number: 01-2119486456-26-0006 | | ~ 50 % |
| Water | CAS no.: 7732-18-5 EC no.: 231-791-2 | | ~ 50 % |
| Corrosion inhibitor | CAS no.: - EC no.: - | | < 1 % |
| Description of the mixture | Liquid | | |
| Component comments | None of the components is subject to classification. | | |

SECTION 4: First aid measures

4.1. Description of first aid measures

| | |
|--------------|--|
| General | Immediately move the patient from the source of exposure. General first aid. Move to fresh air, keep the patient warm and at rest. If unconscious: Loosen tight clothing, place in stable position on one side. Give artificial respiration if breathing has stopped. Contact a physician if symptoms occur. |
| Inhalation | Flush mouth, nose and throath with lots of water. Summon physician if discomfort persists. |
| Skin contact | Remove contaminated clothing and flush skin with copious amounts of water. Wash skin thoroughly with soap and water. If skin is very dry after washing, use lotion. |
| Eye contact | Flush immediately with lukewarm, running water for at least 15 minutes, also under the eyelids. Get medical advice if discomfort continues. |
| Ingestion | Do not induce vomiting. Rinse mouth thoroughly and give large amounts of milk or water to drink if person is conscious. Get medical advice immediately. |

4.2. Most important symptoms and effects, both acute and delayed

| | |
|----------------------------------|---|
| Information for health personnel | Contact the national Poisons Information Centre. General medical examination. |
|----------------------------------|---|

4.3. Indication of any immediate medical attention and special treatment needed

SECTION 5: Firefighting measures

5.1. Extinguishing media

| | |
|------------------------------|---|
| Suitable extinguishing media | Dry powder, foam or carbon dioxide (CO ₂), water. |
|------------------------------|---|

5.2. Special hazards arising from the substance or mixture

Fire and explosion hazards

The product is not flammable.

In case of a fire the water may evaporate completely. When heated to 300 °C, the product will decompose to hydrogen and potassium oxalate. Formation of Hydrogen may cause danger of explosion

5.3. Advice for firefighters

Personal protective equipment

Generally: Evacuate all persons. Wear complete protective suit for fire extinguishing. Use self-contained breathing apparatus and full protective gear when the product is involved in fire.

Other Information

The fire should be extinguished from a safe place. Containers exposed to flames can be cooled with water. Containers can be moved in case of no risk.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Personal precautions

Avoid spillage, skin and eye contact. Use protective equipment as described in item 8.

6.2. Environmental precautions

Environmental precautions

Although the product it not classified as environmental hazard accidental emissions need to be limited. Inform appropriate authorities if larger volumes are involved.

6.3. Methods and material for containment and cleaning up

Methods for cleaning

Pump or mix the chemical with an inert material (sand, vermiculite, sawdust, bark, etc.), collect it and place in a suitable container. Container should be labelled with the products name and composition. Finish treatment of area with water. Dispose in accordance with section 13.

6.4. Reference to other sections

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Handling

Avoid spillage, skin and eye contact. Use protective equipment as described in item 8.

7.2. Conditions for safe storage, including any incompatibilities

Storage

No special storage requirements.

7.3. Specific end use(s)

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Exposure limit values

| Component name | Identification | Value | Year |
|-------------------|--|-------|------|
| Potassium formate | CAS no.: 590-29-4 EC no.: 209-677-9 Registration number: 01-2119486456-26-0006 | | |

DNEL / PNEC from components

| | |
|-----------|---|
| Component | Potassium formate |
| DNEL | Group: Worker Exposure route: Dermal Exposure frequency: Short term |

| | |
|------|---|
| | (acute) Type of effect: Systemic effect Value: 6175 mg/kg bw/day |
| DNEL | Group: Worker Exposure route: Inhalation Exposure frequency: Short term (acute) Type of effect: Systemic effect Value: 435 mg/m ³ |
| DNEL | Group: Worker Exposure route: Dermal Type of effect: Local effect Value: 20,6 mg/cm ² |
| DNEL | Group: Consumer Exposure route: Dermal Exposure frequency: Short term (acute) Type of effect: Systemic effect Value: 3088 mg/kg bw/day |
| DNEL | Group: Consumer Exposure route: Inhalation Exposure frequency: Short term (acute) Type of effect: Systemic effect Value: 107.4 mg/kg bw/day |
| DNEL | Group: Consumer Exposure route: Dermal Type of effect: Local effect Value: 10.3 mg/cm ² |
| DNEL | Group: Consumer Exposure route: Oral Exposure frequency: Long term (repeated) Type of effect: Systemic effect Value: 30.9 mg/kg bw/day |

8.2. Exposure controls

| | |
|--------------------------------|--|
| Occupational exposure controls | Evaluate the most appropriate way for controlling the exposure of chemicals to air, and if mobile or stationary test methods are most convenient. Ensure good ventilation. Eye wash facilities and shower near working area. All protective equipment should be labelled with CE. Wash hands after working with the product. |
|--------------------------------|--|

Precautionary measures to prevent exposure

| | |
|--|--|
| Product related measures to prevent exposure | Avoid contact with skin, eyes and clothing. Do not breathe vapours or spray mist. Ensure that eyewash stations and safety showers are close to the workstation location. |
|--|--|

Respiratory protection

| | |
|------------------------|-------------------------|
| Respiratory protection | Normally not necessary. |
|------------------------|-------------------------|

Hand protection

| | |
|--------------------------------|--|
| Hand protection | Use protective gloves of impervious material, e.g.: rubber gloves. |
| Suitable gloves type | Polyvinylchloride / nitrile rubber gloves. |
| Reference to relevant standard | EN 374: level 6 |
| Suitable materials | E.g. rubber. |
| Unsuitable materials | Gloves of fabric. |
| Breakthrough time | Suitable material nitrile rubber |

Glove thickness approx 0,55 mm
 Break through time > 480 min
 Suitable material polyvinylchloride / nitrile rubber
 Glove thickness approx 0,9 mm
 Break through time > 480 min

Eye / face protection

Eye protection Tightly fitting safety goggles. In addition to goggles, wear a face shield if there is a reasonable chance for splash to the face. Equipment should conform to EN 166.

Skin protection

Skin protection (other than of the hands) For work involving chemical spills, it is recommended to wear a full body suit to protect against penetration by the chemicals.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

| | |
|-------------------------------|-------------------------------|
| Physical state | Liquid |
| Colour | Colourless |
| Odour | No odour |
| pH (as supplied) | Value: < 11.5 |
| Boiling point / boiling range | Value: 116 °C |
| Flash point | Value: > 100 °C |
| Vapour pressure | 20 mmHg (20°C) |
| Specific gravity | 1,33 - 1,37 g/cm ³ |
| Solubility in water | Completely soluble in water |
| Viscosity | 3,2 cP (20°C) |

9.2. Other information

SECTION 10: Stability and reactivity

10.1. Reactivity

10.2. Chemical stability

Stability The product is stable at normal temperatures for use.

10.3. Possibility of hazardous reactions

10.4. Conditions to avoid

10.5. Incompatible materials

Materials to avoid Avoid contact with strong oxidizing materials such as Nitric acid, Hydrogen peroxide and Sulphuric acid.

10.6. Hazardous decomposition products

Hazardous decomposition products The product is stable at normal temperatures for use.

By heating dry Potassium Formate above 300°C it decomposes to Hydrogen and Potassium Oxalate. Formation of Hydrogen may cause danger of explosion.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Components' toxicological data

| | |
|-----------|--|
| Component | Potassium formate |
| LD50 oral | Value: = 5500 mg/kg bw Test animal species: Mouse |

| | |
|-----------------|--|
| | Comments: OECD guideline 401 |
| LD50 dermal | Value: > 2000 mg/kg bw Test animal species: Rat Comments: OECD Guideline 402 |
| LC50 inhalation | Value: > 0,67 mg/l Test animal species: Rat Duration: 4 h |

Other information regarding health hazards

General There is no health hazard associated with the normal use of this product.

Potential acute effects

| | |
|--------------|--|
| Inhalation | At normal use or storage the product has low evaporation rate. |
| Skin contact | Prolonged or repeated contact may cause irritation and dehydration of the skin. |
| Eye contact | Contact with eyes may cause irritation, tears and redness. |
| Ingestion | Low health hazard when ingested. Larger amounts may cause irritation in throat/stomach. Sickness and discomfort. |

SECTION 12: Ecological information

12.1. Toxicity

| | |
|-------------|--|
| Ecotoxicity | LC50, fish (pimephales promelas), 96h: 1750 mg/l. LC50, Daphnia magna, 48h: 2500 mg/l. LC50, Rainbow Trout, 48h: 4600 mg/l |
|-------------|--|

Components' toxicological data

| | |
|------------------------|--|
| Component | Potassium formate |
| Acute aquatic, fish | Value: = 3500 mg/l Method of testing: OECD Guideline 203 (Fish, Acute) Species: Oncorhynchus mykiss Duration: 96 h |
| Acute aquatic, algae | Value: = 3700 mg/l Method of testing: ISO 10253 (Water quality - Marin) Species: Skeletonema costatum (algae) Duration: 72 h |
| Acute aquatic, Daphnia | Value: > 1000 mg/l Method of testing: U.S. EPA (1975): Methods for acu Species: Daphnia magna Duration: 48 h |
| Surface tension | Value: 72 mN/m (20°C) |
| Water solubility | Value: > 1000 g/l |
| Biodegradability | Value: 92 % Test period: 28 days Method of testing: OECD Guideline 301 D |
| Bioaccumulation | In accordance with column 2 of Annex IX, the study does not need to be conducted if the 1-octanol/water partition coefficient is <3. Due to the low logPow of below zero (OSPAR, 2002), accumulation in organisms is not expected. |

12.2. Persistence and degradability

| | |
|--------------------------------|------------------------------------|
| Chemical oxygen demand (COD) | Value: 0,095 |
| Comment COD | gO2 /g |
| Biological oxygen demand (BOD) | Value: 0,09 Test period: 5 days |
| Comment, BOD | g O2/g |
| Persistence and degradability | Readily biological degradable. |

12.3. Bioaccumulative potential

12.4. Mobility in soil

| | |
|---------------------------|---------------------------------------|
| Water solubility | Value: > 1000 |
| Comment, Water solubility | g/l Dissolves completely in water. |

12.5. Results of PBT and vPvB assessment**12.6. Other adverse effects**

| | |
|---------------------------------|-------------------------------------|
| Other adverse effects / Remarks | The product does not bioaccumulate. |
|---------------------------------|-------------------------------------|

SECTION 13: Disposal considerations**13.1. Waste treatment methods**

| | |
|---|--|
| Specify the appropriate methods of disposal | Not classified as hazardous waste. Smaller quantities may be flushed away with large amounts of water. Larger amounts of leftovers and spills should be disposed by a professional waste disposal company or used for recirculation if possible. All waste must be treated in accordance with local and national regulations. |
| Other Information | The product is not classified as environmental hazard, but should nevertheless be treated carefully and not be flushed into drains, water reservoirs or be disposed in nature. If considerably amounts are emitted into lakes, there might be a local increase in pH. Water hazard class 1 |

SECTION 14: Transport information**14.1. UN number****14.2. UN proper shipping name****14.3. Transport hazard class(es)****14.4. Packing group****14.5. Environmental hazards****14.6. Special precautions for user****14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code****Other applicable information.**

| | |
|-------------------------------|------------------------------------|
| Other applicable information. | Not classified as dangerous goods. |
|-------------------------------|------------------------------------|

SECTION 15: Regulatory information

| | |
|--------|-----------|
| EC no. | 209-677-9 |
|--------|-----------|

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

| | |
|-----------------------------|--|
| Legislation and regulations | Norwegian substances list (stoffliste) 2005 Climate and Pollution Agency (KLIF) Norwegian occupational exposure limit values (Administrative normer for forurensning i arbeidsatmosfære, Arbeidstilsynet, best.nr. 361). (91/322/EEC, 96/94/EC, 2000/39/EC, 2006/15/EC) |
|-----------------------------|--|

15.2. Chemical safety assessment

| | |
|---|--|
| Chemical safety assessment has been carried out | Yes |
| CSR required | Yes |
| CSR location | In accordance with REACH article 14, a Chemical safety assessment has been carried out for this substance. |

SECTION 16: Other information

| | |
|---|--|
| Supplier's notes | The safety data sheet has been approved in accordance with the regulations in force. |
| Sources of key data used to compile the safety data sheet | Chemical safety report (CSR) for potassium formate. |
| Responsible for safety data sheet | ADDCON Nordic AS |
| Prepared by | ADDCON Nordic AS Øyvind O. Due telephone: + 47 35 56 41 37 |