

Section 1. Identification of the substance / mixture and of the company/undertaking**1.1. Product identifier****Borygo Runway KF****1.2. Relevant identified uses of the substance or mixture and uses advised against**

Industry: functional liquids.

Use: de-icing.

1.3. Details of the supplier of the safety data sheet

Boryszew S.A.

Oddział Boryszew ERG w Sochaczewie

ul. 15 Sierpnia 106; 96-500 Sochaczew

tel. 46 863 02 01

fax. 46 863 00 96

website: boryszewerg.com.plemail: certyfikacja@boryszewerg.com.pl**1.4. Emergency telephone number**

112 (general emergency telephone number)

Section 2. Hazards identification**2.1. Classification of the substance or mixture**

The product is not classified as hazardous under current legislation (according to Regulation No 1272/2008).

Hazards for human health or life:

The product is not classified as hazardous for human.

Hazards for the environment:

The product is not classified as hazardous for the environment.

Other hazards:

None.

2.2. Label elements

According to Regulation No. 1272/2008:

Pictograms: none.

Signal word: none

H-phrases: none.

P-phrases: P 201 - Obtain special instructions before use.

P 270 - Do not eat, drink or smoke when using this product.

P 301+P312 - IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell.

P 314 - Get medical advice/attention if you feel unwell.

P 404 - Store in a closed container.

P 501 - Dispose of contents/container to selective waste collection

2.3. Other hazards

Mixture components do not meet the PBT or vPvB criteria according to Annex XIII of the REACH Regulation.

Section 3. Composition/information on ingredients**3.1. Substances**

Not applicable

3.2. Mixtures

Aqueous solution of potassium formate and inhibitors.

Substance name	Concentration range [%]	CAS Number:	EC Number:	Hazard symbols
				Regulation (EC) 1272/2008
potassium formate*	approx. 50 %	590-29-4	209-677-9	does no classify

*Registration No : 01-2119486456-26-xxxx

Section 4. First aid measures**4.1. Description of first aid measures**

General information: Remove contaminated clothing immediately

Inhalation: in case of inhalation, take the affected person out to fresh air.

Skin: wash contaminated skin thoroughly with soapy water.

Eye: immediately wash eyes with plenty of running water.

Swallowing: if swallowed, give plenty of water to drink and provide medical attention.

4.2. Most important symptoms and effects, both acute delayed

Symptoms and hazards are unknown

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

Symptomatic treatment. Show this material safety data sheet, product label or packaging to the help providing medical personnel.

Section 5. Firefighting measures**5.1. Extinguishing media**Extinguishing media that should be used: Powder. Carbon dioxide (CO₂). Alcohol-resistant extinguishing foam.

Extinguishing media that must not be used: Strong water jet.

5.2. Special hazards arising from the substance or mixture

Carbon oxides and other hazardous thermal decomposition products may be released during fire.

5.3. Advice for firefighting

Alert everyone in the vicinity of the incident. Evacuate from the affected area all persons that are not participating in the fire fighting action. Persons participating in fire fighting activities should be trained, wear gas-proof protective clothing and a self-contained breathing apparatus.

Section 6. Accidental release measures**6.1. Personal precautions, protective equipment and emergency procedures**

Wear suitable protective equipment. Do not inhale vapours. Provide adequate ventilation.

6.2. Environmental precautions

Do not allow the product to enter the sewage and drainage systems, and also the ground and surface water or soil. If large amount of product is released notify applicable authorities.

6.3. Methods and material for containment and cleaning up

Stop or limit the leakage and isolate the contaminated area. Cover with a liquid absorbing material, e.g. sand, earth, vermiculite, diatomaceous earth, saw dust. Mechanically collect to a correctly labelled, tight container and submit for disposal. Wash off the remains with plenty of water.

6.4. References to other sections

Personal protective measures - see section 8.

Waste handling - see section 13.

Section 7. Handling and storage

7.1. Precautions for safe handling

Observe general occupational health and safety rules. Use in an appropriately ventilated place. Do not eat, drink or smoke when using the product. Avoid contact with skin and eyes.

Observe general industrial fire regulations.

7.2. Conditions for safe storage, including any incompatibilities

Do not store in tin packaging. Do not store with acids. Protect from direct sunlight.

7.3. Special end uses

No data available on special uses.

Section 8. Exposure controls / personal protection

8.1. Control parameters

The product does not contain components subject to the exposure control in the workplace.

DNEL/DMEL value Potassium formate (CAS No.: 590-29-4; EC No.: 209-677-9)

Route of exposure	Personnel	Exposure time/effect	Value	Remarks
skin	employee	Short-term exposure / systemic effect	6175 mg/kg body weight/day	DNEL
inhalation	employee	Short-term exposure / systemic effect	435 m ³	DNEL
skin	all population	Short-term exposure / local effect	20.6 mg/cm ²	DNEL
skin	employee	Long-term exposure / systemic effect	6175 mg/kg body weight/day	DNEL
skin	employee	Long-term exposure / local effect	20.6 mg/cm ²	DNEL
inhalation	employee	Long-term exposure / systemic effect	435 m ³	DNEL
skin	all population	Short-term exposure / systemic effect	3088 mg/kg body weight/day	DNEL
inhalation	all population	Short-term exposure / systemic effect	107.4 mg/cm ³	DNEL
skin	all population	Short-term exposure / local effect	10.3 mg/cm ²	DNEL
skin	all population	Long-term exposure / systemic effect	3088 mg/kg body weight/day	DNEL
inhalation	all population	Long-term exposure / systemic effect	107.4 mg/cm ³	DNEL
oral	all population	Long-term exposure / systemic effect	30.9 mg/kg body weight/day	DNEL
skin	all population	Long-term exposure / local effect	103.0 mg/cm ²	DNEL

PNEC values Potassium formate (CAS No.: 590-29-4; WE No.: 209-677-9)

Environment	Value
water (freshwater)	2 mg/l
water (seawater)	0.2 mg/l
water (occasional releases)	10 mg/kg dw sediment
sediment (freshwater)	13.4 mg/kg dw sediment
sediment (seawater)	1.34 mg/l
soil	1.5 mg/l dw soil
STP	1.8 mg/l

Borygo Runway KF

This Material Safety Data Sheet according to 1907/2006/EC (REACH), 1272/2008 (CLP) & 830/2015

8.2. Exposure controls

Avoid direct product contact with eyes or skin. Observe general precautionary measures required when using chemicals.

Skin protection: In normal usage conditions, it is not recommended to use any special clothing/skin protection measures.

Eye protection: In case of possible exposure to product vapours or sprays wear goggle type protective glasses.

Respiratory Protection: Respiratory tract protection equipment in case of insufficient ventilation or during long-term exposure. Effective ventilation in the workplace is recommended (general, local).

Section 9. Physical and chemical properties**9.1. Information on basic physical and chemical properties**

form	liquid
colour	colourless
odour	characteristic
odour threshold	not determined
pH (at 20 °C)	10,2 ÷ 11.2
crystallisation temperature	maximum - 15°C (1:1 by weight)
crystallisation temperature	- 60°C (ready to use fluid)
initial boiling point	approximately 115°C
ignition temperature	>100°C
evaporation rate	Not applicable
flammability (solid, gas)	not determined
upper/lower explosion limit	not determined
vapour buoyancy	not determined
vapour density to air	not determined
typical density (at 20°C)	1.34 – 1,35 g/cm ³
solubility	water - complete
partition coefficient: n-octanol/water	not determined
auto-ignition temperature	no spontaneous ignition
decomposition temperature	not determined
explosive properties	does not demonstrate
oxidising properties	does not demonstrate
kinematic viscosity	max. 2 mm ² /s in at 20 °C max. 5 mm ² /s in at -10 °C

9.2. Other information

Not determined

Section 10. Stability and reactivity**10.1. Reactivity**

Unknown in the recommended usage conditions.

10.2. Chemical stability

Product stable under normal conditions of storage and use.

10.3. Possibility of hazardous reactions

Unknown in the recommended usage conditions.

10.4. Conditions to avoid

None

Borygo Runway KF

This Material Safety Data Sheet according to 1907/2006/EC (REACH), 1272/2008 (CLP) & 830/2015

10.5. Incompatible materials

Acids

10.6. Hazardous decomposition products

Unknown in the recommended usage conditions.

Section 11. Toxicological information**11.1. Information on toxicological effects**ATE mix – not applicable

Data based on the main component

<u>Acute oral toxicity</u>	LD ₅₀ – 5 500 mg/kg (mouse)
<u>Acute inhalation toxicity</u>	Not determined
<u>Acute skin toxicity</u>	LD ₅₀ – 2 000 mg/kg (rat)
Skin irritation	Not irritant (rabbit)
Eyes irritation	Not irritant (rabbit's eye)
Sensitisation	Not sensitising (guinea pig)
Repeated dose toxicity	Toxicity post repeated dose
	NOEAL 3 877 mg/kg (oral, rat)
	Chronic toxicity
	NOEAL 2 585 mg/kg (oral, rat)
Mutagenicity	No mutagenic effect in several mutagenicity tests
Carcinogenicity	No carcinogenic effect observed in long-term studies
Reproductive toxicity	No harmful effect on the reproductive system should be expected
Teratogenicity	No teratogenic effect observed in the animal studies
Target organs toxicity (STOT) – single exposure	Not determined
Target organs toxicity (STOT) – repeated exposure	Not determined

Section 12. Ecological information**12.1. Toxicity**

Data based on the main component

Acute toxicity to the aquatic environment:

- fish (roe; 48 h) LC₅₀ > 1 000 mg/l; (Pimelphales promelas, 96 h) LC₅₀ : 2.250 mg/l
- daphnia (Daphnia magna, 48 h) EC₅₀ : 1.225 mg/l
- algae (Desmodesmus subspicatus, 72 h) EC₅₀: 1.000 mg/l

12.2. Persistence and degradability

Biodegradation tested in accordance with APHA Standard Methods for Examination of Water and Waste Water.

The percent of fluid biodegraded in five days at 20 °C

BOD: 0.04 kg O₂/ kg fluid

The five days theoretical total oxygen demand (TOD) of the fluid, expressed in kilograms of oxygen per kilograms of fluid

COD: 0.11 kg O₂/ kg fluid

12.3. Bioaccumulative potential

bioaccumulation - not determined

12.4. Mobility in soil

Transport division between the environmental elements – not determined

12.5. Results of PBT and vPvB assessment

Not applicable

12.6. Other adverse effects

No data available that would confirm product harmfulness for the aquatic species,

Section 13. Disposal considerations**13.1. Waste treatment methods**

Do not discharge into drains. Do not allow the substance to enter surface or ground water. Product waste to be collected for disposal (recycling) or incinerate in appropriate plants.

Used packaging should be submitted to the packaging waste recycling companies.

Classification to be specified according to the place of manufacture as per criteria defined by the applicable regulations. If the product was used in any further operations/processes, the end user should define the produced waste and assign the correct code.

Section 14. Transport information

The product is not classified in the hazardous materials list. it is not regulated by the ADR regulation.

14.1. UN Number

None

14.2. UN proper shipping name

None

14.3. Transport hazard class(es)

None

14.4. Packing Group

None

14.5. Environmental hazards

Not applicable

14.6. Special precautions for user

Not applicable

14.7. Transport in bulk according to Annex II of MARPOL and the IBC Code

Not applicable

Section 15. Regulatory information**15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture**

Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorization and Restriction of Chemicals (REACH), establishing a European Chemicals Agency, amending Directive 1999/45/EC and repealing Council Regulation (EEC) No 793/93 and Commission Regulation (EC) No 1488/94 as well as Council Directive 76/769/EEC and Commission Directives 91/155/EEC, 93/67/EEC, 93/105/EC and 2000/21/EC.

Regulation (EC) No 1272/2008 of the European Parliament and of the Council of 16 December 2008 on classification, labeling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006 (Text with EEA relevance).

Borygo Runway KF

This Material Safety Data Sheet according to 1907/2006/EC (REACH), 1272/2008 (CLP) & 830/2015

COMMISSION REGULATION (EU) 2015/830 of 28 May 2015 amending Regulation (EC) No 1907/2006 of the European Parliament and of the Council on the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH)

Commission Directive 2000/39/EC of 8 June 2000 establishing a first list of indicative occupational exposure limit values in implementation of Council Directive 98/24/EC on the protection of the health and safety of workers from the risks related to chemical agents at work (Text with EEA relevance).

15.2. Chemical safety assessment

No data available on conducting the chemical safety assessment for the substance.

Section 16. Other information

Explanation of abbreviations and acronyms:

PNEC – expected concentration of the substance not affecting the environment

DNEL – derived no-effect level

PBT – (Substance) Persistent, demonstrating ability to bioaccumulate and toxic

vPvB – (Substance) Very persistent and demonstrating a very high ability to bioaccumulate

Full text of indicated P phrases mentioned in section 2:

P 201 - Obtain special instructions before use.

P 270 - Do not eat, drink or smoke when using this product.

P 301+P312 - IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell.

P 314 - Get medical advice/attention if you feel unwell.

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Classification was made by calculation method.

- Revised section (23.01.2015):
 - section 12-
 - 12.2. Persistence and degradability
 - 12.1. Toxicity
- Revision section (28.07.2016):
 - 2.1, 2.2, 3.2, 11.1, 15.1, 16
- Revision section (13.03.2017):
 - 9,15
- Revision section (31.03.2017):
 - 9,12

The above information were created based on the current data describing the product, as well as the producer's experience and knowledge in this area. They are to be treated as a supporting information in safe handling during transport, storage and product usage. However, this does not indemnify the user from the responsibility for the incorrect usage of the above information and adherence to all relevant regulations.