

Section 1. Identification of the substance / mixture and of the company/undertaking

1.1. Product identifier

Borygo Runway SF NW-058

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

Industry: functional liquids

Intended use: de-icing

1.3. Details of the supplier of the safety data sheet

Boryszew S.A.

ERG Boryszew Branch in Sochaczew

ul. 15 Sierpnia 106; 96-500 Sochaczew

tel. 46 863 02 01

fax. 46 863 00 96

website: boryszewerg.com.pl

email: 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

According to Regulation No. 1272/2008:

The product is not classified as hazardous under current legislation.

Hazards for human health or life:

The product is not classified as hazardous for human.

Inhalation: inhalation of dust may irritate the respiratory tract with symptoms of throat inflammation, cough and dyspnoea.

Ingestion: Causes irritation to the gastrointestinal tract. Symptoms may include: nausea, vomiting and diarrhea.

Contact with skin: Irritating to skin. Symptoms include redness, itching and pain.

Contact with eyes: causes irritation, redness and pain.

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

No information on meeting the PBT or vPvB criteria according to Annex XIII of the REACH Regulation.

Section 3. Composition/information on ingredients

3.1. Substances

Substance name	Concentration range [%]	CAS Number:	EC Number:	Hazard symbols
				Regulation (EC) 1272/2008
sodium formate*	98 %	141-53-7	205-488-0	does not classify

Registration number for sodium formate: the substance is subject to the transitional period

3.2. Mixtures

Not applicable

Section 4. First aid measures

4.1. Description of first aid measures

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

Skin: thoroughly wash contaminated skin with soapy water.

Eyes: immediately wash eyes with plenty of running water.

Ingestion: If swallowed, seek medical attention immediately.

4.2. Most important symptoms and effects both acute and delayed

Symptoms and hazards are unknown

4.3. Indications 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

Suitable extinguishing media: water spray, carbon dioxide, dry chemical

Unsuitable extinguishing media: Strong water jet.

5.2. Special hazards arising from the substance or mixture

Substance is not considered to be fire hazard.

5.3. Advice for firefighters

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. Mechanically collect to a correctly labelled, tight container and submit for disposal.

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

Avoid damp conditions (the product is hygroscopic). Store in a tightly closed container; store in a cool, dry, well-ventilated place. Protect against physical damage. Empty containers may be hazardous since they may contain substance residues (dust, solids).

7.3. Special end use(s)

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.

MAC, STEL – not established

DNEL/DMEL value Sodium formate (CAS No.: 141-53-7, EC No.: 205-488-0)

Route of exposure	Personnel	Exposure time/effect	Value	Comments
skin	staff member	Short-term exposure / systemic effect	5000 mg/kg body weight/day	DNEL
inhalation	staff member	Short-term exposure / systemic effect	350 mg/m ³	DNEL
skin	all population	Short-term exposure / local effect	8.33 mg/cm ²	DNEL
skin	staff member	Long-term exposure / systemic effect	5000 mg/kg body weight/day	DNEL
skin	staff member	Long-term exposure / local effect	16.67 mg/cm ²	DNEL
inhalation	staff member	Long-term exposure / systemic effect	353 mg/m ³	DNEL
skin	all population	Short-term exposure / systemic effect	2,500 mg/kg body weight/day	DNEL
inhalation	all population	Short-term exposure / systemic effect	87 mg/cm ³	DNEL
skin	all population	Long-term exposure / systemic effect	2,500 mg/kg body weight/day	DNEL
inhalation	all population	Długotrwała ekspozycja / skutek ogólnoustrojowy	87 mg/cm ³	DNEL
oral	all population	Long-term exposure / systemic effect	25 mg/kg body weight/day	DNEL
skin	all population	Long-term exposure / local effect	8.3 mg/cm ²	DNEL

PNEC values Sodium formate (CAS No.: 141-53-7, EC No.: 205-488-0)

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
Wastewater treatment plant	2.21 mg/l

8.2. Exposure control

Observe general precautionary measures required when using chemicals.

Ventilation system: It is recommended to use local and/or general ventilation system, in order to minimize the exposure of personnel. Local ventilation system is generally more advantageous since it allows for the control of emission of pollutants at the source, preventing them from entering into the general work area.

Skin protection: Wear protective gloves and clean protective clothing

Eye protection: Keep the eye wash station and rapid soaking units in the workplace. Wear safety goggles and/or full face shield in places where of possible dusting or splashing of the solution.

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). Under the conditions of use where exposure to dust or mist is apparent, and technical preventive measures are impossible, masks with particulate matter filter may be used. In the presence of the oil particles (e.g. greases, cutting fluids, glycerin, etc.), use type R or P filter. In emergency situations or when the exposure level is not known, use an air powered pressure respirator with a full face mask. Warning: Air purifying respirators do not protect the workers in oxygen-deficient atmosphere.

Section 9. Physical and chemical properties

9.1. Information on basic physical and chemical properties

phase	uniform, irregular granules
colour	white
odour	odourless to slight scent of formic acid
odour threshold	not determined
pH (at 20°C)	11,2-12,2 (15% solution)
decomposition temperature	< 250 °C
freezing point temperature	- 2 °C (solution 5 %) - 5 °C (solution 10 %) - 9 °C (solution 15 %) - 18 °C (solution 25 %)
initial boiling point	not determined
ignition temperature	not determined
evaporation rate	not applicable
flammability (solid, gas)	not determined
upper/lower explosion limit	not determined
vapour pressure	not determined
vapour density to air	not determined
typical density (at 20°C)	1,92 (at 20°C)
solubility	soluble in water (at 20 °C)
partition coefficient: n-octanol/water	not determined
spontaneous ignition temperature	not determined
decomposition temperature	not determined
melting point	320 °C
explosive properties	does not demonstrate
oxidising properties	does not demonstrate
water content	< 1%

9.2. Other information

combustion temperature	not determined
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Section 10. Stability and reactivity

10.1. Reactivity

Reactions with strong acids to form formic acid vapours.

10.2. Chemical stability

Hygroscopic. Readily absorbs moisture from air. Solutions are strong alkalis.

10.3. Possibility of hazardous reactions

Unknown under recommended usage conditions.

10.4. Conditions to avoid

Moisture

10.5. Incompatible materials

Acids

10.6. Hazardous decomposition products

At higher temperatures the substance degrades to hydrogen and sodium oxalate, and then to sodium carbonate. Thermal decomposition may be associated with the formation of carbon dioxide and carbon monoxide.

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 >3 000 mg/kg (rat)
<u>Acute skin toxicity</u>	LD ₅₀ >2 000 mg/kg (rat)
<u>Acute toxicity (other routes of administration)</u>	LD ₅₀ – 807 mg/kg (mouse)
Skin irritation	non-irritant
Eye irritation	may cause irritation.
Sensitisation	Non-sensitising
Repeated dose toxicity	Toxicity post repeated dose
oral:	NOAEL development 1,000 mg/kg (rat) NOAEL fertility 1,000 mg/kg (rat)
Mutagenicity	The substance is not considered to be a mutagen
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	oral: NOAEL systemic/90d 3,185 mg/kg bw/d (rat)

Section 12. Ecological information

12.1. Toxicity

Data based on the main component:

Acute toxicity to the aquatic environment:

- fish (pimephales, 96 h) LC₅₀ : 3.225 mg/l
- daphnia (48 h) LC₅₀: 1.475 mg/l
- algae (Pseudokirchnerella subcapitata, 72 h) EC₅₀> 1 000 mg/l

12.2. Persistence and degradability

Easily biodegradable product.

BOD₅: 0,14 kg O₂/kg solid

BOD₁₅: 0,15 kg O₂/kg solid

BOD₂₀: 0,15 kg O₂/kg solid

COD: 0,27 kg O₂/kg solid

12.3. Bioaccumulative potential

not determined

12.4. Mobility in soil

Transport and 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 toxicity to aquatic life.

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. The product is not regulated by the ADR regulation.

14.1. UN Number

None

14.2. UN correct 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 users

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).

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).

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)

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.

P 404 - Store in a closed container.

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Classification was made by calculation method.

Revision history:

- section 9 (24.02.2015)

- section 2.1, 2.2, 3.2, 11.1, 16 (22.06.2015)

- section 5, 9, 12.1, 12.2 (1.06.2016)

- section 9,12 (12.04.2017)

This Safety Data Sheet has been prepared based on the data provided by the manufacturer:

Newave Aerochemical Co., Ltd

No.17 South, Section 2

2nd Ring Road in Chengdu

Information presented above are based on the currently available data describing the product, as well as the manufacturer's experience and knowledge in this area. They shall 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.