according to Regulation (EC) No 1907/2006 (REACH), as amended (Annex II, as amended, according to Regulation (EC) No EC 2015/830)

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SECTION 1: IDENTIFICATION OF SUBSTANCE/MIXTURE AND OF COMPANY/PLANT

1.1. Product ID Chemical name (IUPAC name): Sodium Hydrogen Carbonate

Synonyms: Bicarbonate of soda, sodium bicarbonate

CAS number: 144-55-8 EC number: 205-633-8 Chemical formula: NaHCO₃

REACH Registration No: 01-2119457606-32-0019

1.2. Relevant identified uses of the substance/mixture and uses advised against Scope of application:

For purification of exhaust gases, production of cleaning agents, as a technological additive to metals and in the metallurgical industry, in wood-pulp and paper industry, other industry references,

professional use, use by consumers (end users).

Overview of the descriptors of identified usage presented in Annex

1 to this Certificate.

Uses advised against not identified.

Exposure assessment is not required because sodium hydrogen carbonate is not classified according to the EU Classification, Labeling and Packaging of Substances and Mixtures (CLP) Regulation (EC) no. 1272/2008. In this connection, an overview of exposure scenarios is not required.

1.3. Details for suppliers which is provided with the Safety Certificate

Manufacturer:

Joint Stock Company "Bashkir Soda Company" (JSC "BSC")

Contact address:

JSC "BSC", 32, Tekhnicheskaya str., Sterlitamak,

453122, Russia,

Phone: (3473) 29-57-22,

Fax: (3473) 29-51-43 ex. 27-05 E-mail: <u>Matalinova.EG@soda.ru</u>

Person responsible in EC: Vladimir Khodyrev

E-mail: vovets_uk@list.ru

Special representative Kaustik Europe B.V.

Postal address:

Kaustik Europe B.V. Wijnhaven 3L 3011 WG, Rotterdam the

Netherlands

1.4. Emergency number

(3473) 29-76-09 - help desk

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SECTION 2: HAZARD IDENTIFICATION

2.1. Classification of substance or mixture

GHS: not classified; PBT: not classified.

Sodium Hydrogen Carbonate currently is not listed in Annex VI EU Classification. Labeling and Packaging of Substances and Mixtures (CLP) Regulation (EC) No 1272/2008. Based on available actual data of physical hazards, health hazards, environmental hazards, sodium hydrogen carbonate is not classified according to CLP Regulation.

2.2. Label elements

Globally Harmonized System (GHS)

Safety marking of health hazards and environmental hazards are not required by GHS criteria.

Sodium hydrogen carbonate currently is not listed in Annex VI EU Classification, Labeling and Packaging of Substances and Mixtures (CLP) Regulation (EC) No 1272/2008.

Based on available actual data of physical hazards, health hazards, environmental hazards, sodium hydrogen carbonate does not need labeling in accordance with the CLP.

In this connection, H-phrases and R-phrases are absent.

2.3. Other potential hazards

There is no risks if comply with requirements for the storage and use of the product. Sodium hydrogen carbonate causes irritation in contact with mucous membranes. Regular work in an atmosphere contaminated with sodium bicarbonate dust causes irritation of the respiratory tract.

SECTION 3: COMPOSITION / INFORMATION ON INGREDIENTS

3.1. Substances

Sodium hydrogen carbonate Assay: more than 99,6 % CAS number: 144-55-8 EC number: 205-633-8

Not classified according to Regulation No 1272/2008.

Note:

- concentration of components is indicated on the dried basis;

- impurities having concentration less that 1,0 % are not indicated.

3.2. Mixtures

Not applicable

SECTION 4: FIRST AID MEASURES

4.1. Description of first aid measures

Inhalation:

- rest, fresh air;

according to Regulation (EC) No 1907/2006 (REACH), as amended (Annex II, as amended, according to Regulation (EC) No EC 2015/830)





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Eye contact:

- Flush with running water at least 15 minutes.

Skin contact:

- Wash with soap and water.

Ingestion:

- Rinse mouth and drink lots of water.

4.2. The most important acute and delayed symptoms and after-effects

Particular reactions of the human body to the product are still unknown.

4.3. Data for urgent medical assistance and special treatment required in this case

Treatment: Symptomatic treatment (deactivation).

SECTION 5: FIRE FIGHTING MEASURES

5.1. Extinguishing Media Determine the fire fighting measures of surrounding areas.

Water, foam, dry chemical, carbon dioxide (CO2).

5.2. Special hazards from the substance or mixture

No particular risks are known.

5.3. Instructions for fire

extinguishing

Special protective equipment:

Wear self-contained breathing apparatus.

Additional information:

The product is non-flammable, fire- and explosion-proof; Determine the fire fighting measures of surrounding materials. Residues after the fire and contaminated water used to extinguish the fire should be disposed of in accordance with the regulations.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1. Personnel safety precautions, protective equipment and emergency actions

Avoid formation of dust. Do not breathe dust. Avoid contact with skin, eyes and clothing. Use personal protective clothing.

Refer to Section 8 for information on personal chemical protection

equipment.

6.2. Environmental Precautions Do not flush into surface water or sanitary sewer system.

Prevent any mixing with acid during flushing into the sewer / spill (formation of gas).

6.3. Cleanup Procedures

Avoid formation of dust. Collect spillage mechanically. Dispose of

the adsorbed material in accordance with the regulations.

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6.4. Links to other sections

Information on exposure restriction and control / personal protective

equipment and disposal are found in Sections 8 and 13.

SECTION 7: HANDLING AND STORAGE

7.1. Precautions on safe handling

Avoid formation of dust. Avoid breathing dust. Avoid contact with

skin, eyes and clothing.

Ensure adequate ventilation at the processing facilities.

Keep away from incompatible products.

Provision of fire and explosion safety:

The product does not promote the spread of fire, is not self-igniting

or explosive.

7.2. Conditions for safe storage,

considering the

incompatibility of products

Suitable materials for packaging: low density polyethylene, high

density polyethylene, paper.

Store in a tightly closed container in a well ventilated area.

Unsuitable packaging materials:

- no data available

7.3. Specific areas of end use

No information available.

SECTION 8: EXPOSURE CONTROLS/PERSONAL CHEMICAL PROTECTION

8.1. Control Parameters

The maximum pemissible concentration (MPC) of sodium hydrogen carbonate in the air of working zone is 5 mg/m³ (aerosol).

Permissible Exposure Limits:

Derived No-Effect Level - DNEL(s)

DNEL acute - not considered necessary;

DNEL long term - not considered necessary;

DNEL local for oral exposure - not considered necessary;

DNEL local for dermal exposure- not considered necessary;

DNEL acute local during inhalation - not considered necessary;

DNEL long term, local during inhalation - not considered necessary;

DNEL eye exposure – not considered necessary.

Predicted No-Effect Concentrations (PNEC)

PNEC residue – not considered necessary;

PNEC soil - not considered necessary;

PNEC atmospheric air - not considered necessary;

PNEC STR- not considered necessary;

PNEC STP-added - not considered necessary;

PNEC oral (secondary infection) - not considered necessary.



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8.2. Exposure Controls

Respiratory protection:

Respiratory protection in case of dust formation: breathing mask

with steam filter (EN 141), recommended filter type P2.

Hand Protection:

Protective gloves resistant to chemicals (EN 374).

Eye protection:

Goggles with side protection (framed) (EN 166).

Safety clothing:

No body protection is required if used for its intended purpose and the generally accepted rules of industrial hygiene are observed.

Environmental impact control:

Refer to Section 12 for information on environmental control.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

Physical state: solid.

Appearance: crystal powder or microgranules.

Color: white. Odor: no odor.

Odor threshold: not applicable. Does not smell.

pH: 8,4 (93,4 g/l water solution @ 20° C).

Substance type: inorganic.

Melting/freezing point: Not determined.

Initial boiling point and boiling range: Not determined.

Flash point: Not applicable (solid substance).

Evaporation rate: Not applicable. Flammability: nonflammable.

Explosion limits:

- upper limit: Not applicable (explosion-proof),

- lower limit: Not applicable (explosion-proof).

Vapour pressure: Not applicable (solid substance). Vapour density: Not applicable (solid substance).

Relative density: 2.21-2.23 g/cm³ @ 20° C.

Water solubulity: 93.4 g/l @ 20°C.

Partition Coefficient n-Octanol/Water (log KOW) -4,01

(TOXNET).

Autoignition temperature: Not applicable.

Decomposition temperature: >50 °C.

Viscosity: Not applicable (solid substance).

Explosion hazard: None (explosion-proof).

Oxidation properties: Not oxidized (weak alkali).



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Bulk density (avg) 0,9 g/cm³ Heat of dissolution: 48,8 ccal/kg

Specific heat capacity: 0,249 ccal/kg·degree

9.2. Additional Information

Sodium bicarbonate is evaluated in the context of the Hazards Assessment Program for Large-Scale Chemicals (OECD, 2002). The substance quality assessment published in the United Nations Environment Program (UNEP) is included in the Chemical Safety Report.

SECTION 10: STABILITY AND REACTIVITY

10.1. Reactivity Does not react under normal environmental conditions.

Not compatible with acids. Slowly decomposes in water.

10.2. Chemical Stability Chemically stable

10.3. Possibility of Hazardous H

Reactions

Hazardous interaction reactions are unknown.

10.4. Conditions to Avoid Avoid exposure to humidity.

Keep away from heat sources. Decomposition follows at

temperatures > 50 ° C.

10.5. Incompatible Materials

Incompatible with acids.

10.6. Hazardous Decomposition

Products

Hazardous decomposition products are unknown

SECTION 11: TOXICOLOGY INFORMATION

Toxicokinetics

The main extracellular buffer in the blood and intermediary liquid of vertebrates is the bicarbonate buffer system described by the following equation:

$$H_2O + CO_2 \iff H_2CO_3 \iff H^+ + HCO_3^-$$

Carbon dioxide from tissues quickly spreads into red blood cells, where it hydrates with water and forms carbonic acid. The resulting carbonic acid decomposes into bicarbonate and hydrogen ions. Most of the bicarbonate ions diffuse into the plasma. Since the ratio of H₂CO₃ to dissolved CO₂ is constant in equilibrium, the pH can be expressed as the concentration of bicarbonate ions and the partial pressure of CO₂ by means of the Henderson-Hasselbach equation:

pH factor = $pk + log [HCO_3]/aPCO2$.

Human plasma usually has a pH of 7.40. If the pH falls below 7.0 or rises above 7.8, irreversible damage can occur. Compensatory

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mechanisms for acid-alkaline disorders function to change the HCO₃⁻ / PCO₂ ratio, returning the blood pH to normal. Thus, metabolic acidosis can give HCO₃⁻ compensated by hyperventilation and by increased kidney absorption. Metabolic alkalosis (alkaline intoxication) can be compensated by hyperventilation and excess HCO₃⁻ in urine. Renal mechanisms are usually sufficient to restore the acid-base balance. Fixing of sodium by stimulation of sodium bicarbonate is much less than the absorption of sodium through food. Therefore, sodium bicarbonate will not be systematically present in the body. In addition, you need to realize that the taking of sodium bicarbonate will lead to neutralization in the stomach due to gastric acid.

11.1. Information on toxic effect

Toxicity

Not toxic for single oral intake.

Acute toxicity: oral $LD_{50} = 4200 \text{ mg/kg}$, rats.

Not toxic if inhaled once.

Not toxic in case of single skin contact.

Irritant effect.

Skin irritation: Slightly irritating. The effects are completely

reversible. (Rabbits).

Not classified as corrosive / skin irritant.

Eye irritation: Not classified as a serious eye irritant. (Rabbits) Respiratory or skin sensitization: Not classified as respiratory

irritant or skin allergen.

Mutagenicity of germ cells.

Not classified as a germ cell mutagen.

Carcinogenicity.

Not classified as a carcinogen.

Reproductive toxicity.

Not classified as a toxin for reproduction.

Teratogenic effect.

Based on the available data, the classification criteria are not applied.

Gonadotropic effect.

Based on the available data, the classification criteria are not applied.

Risk of aspiration.

according to Regulation (EC) No 1907/2006 (REACH), as amended (Annex II, as amended, according to Regulation (EC) No EC 2015/830)

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Not classified as hazardous by inhalation.

Symptoms associated with physical, chemical and toxicological characteristics:

- if swallowed: no data:
- In case of contact with eyes: slightly irritating;
- After inhalation: After inhalation of dust, irritation of the respiratory tract may occur.
- After contact with skin: frequent and prolonged contact with skin may cause mild skin irritation.

SECTION 12: ECOLOGICAL INFORMATION

12.1.	Ecoto	oxici	itv

Assessment of aquatic toxicity:

Not highly hazardous for aquatic organisms.

(EU Regulation 1272/2008)

Toxicity to fish:

CL₁₀₀ (24-48) 10000 mg/l Salino (EU source)

CL₅₀ (96) 8250-9000 Centrarchadae

Toxicity (acute) for invertebrates:

L (E) $C_{50} > 100 \text{ mg/l}$,

(48 hours EC₅₀ with Daphnia magna (magna) -3100 mg/l).

Toxicity (chronic) for invertebrates:

NOEC> 0.1 mg/l,

(21-day NOEC with Daphnia Magna (magna)> 576 mg/l).

Toxicity to aquatic algae and cyanobacteria:

(5-day Nitzschia Linearis W. Sm. EC₅₀> 650 mg/l)

12.2. Persistence and Degradability

Methods for determination of biodegradability are not applicable to

inorganic substances.

12.3. Bioaccumulation Potential

Not determined

12.4. Variability in soil

Not determined

12.5. Evaluation of PBT and vPvB

According to Annex XIII of the REACH Regulation, inorganic

substances should not be evaluated by PBT or vPvB.

12.6. Other Adverse Effects

Not determined

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SECTION 13: DISPOSAL CONSIDEATIONS

13.1. Waste Processing/Treatment Methods Methods of waste disposal:

Contact waste disposal services.

If reuse is not feasible, dispose it in accordance with national, state

or local regulations.

Contaminated packaging:

Recycling is preferable to disposal or incineration (if possible).

Wash containers for storage with water.

Ensure flushing water in accordance with local and national

instructions / regulations.

Contaminated packaging should be burned at an appropriate

incineration plant for which a license is obtained from the competent

authorities.

SECTION 14: TRANSPORTATION INFORMATION

14.1. UN number Not applicable. The product is not dangerous goods.

14.2. Shipping Name Sodium Bicarbonate

14.3. Transport Hazard Class <u>Land Transportation</u>

ADR / RID - not classified

River Transportation
AND (R) - not classified

Sea Transportation
IMDG - not classified

Air Transportation

ICAO / IATA - not classified

14.4. Packaging Group Not controlled

14.5. Environmental Hazard None (non-hazardous to the environment in accordance with the

Technical Regulations)

14.6. Special precautions for user No additional information.

14.7. Transportation in bulk

in accordance with the

Annex

II MARPOL 73/78 and

International

Code for Transportation of Dangerous Chemicals In

Bulk (IBC)

Not controlled

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SECTION 15: REGULATORY INFORMATION

15.1. Safety, Health and
Environment / Legislation
specific for the substance or
mixture

Material safety data sheet has been prepared taking into account the requirements of the following international and national laws:

REACH Regulation 1907/2006 / EC,

CLP Regulation (EC) No 1272/2008 / EC,

Directive 98/24 / EC, Directive 2000/39 / EC, Directive 2008/98 / EC.

15.2. Chemical Safety Assessment

The chemical safety assessment was carried out for this substance.

SECTION 16: OTHER INFORMATION

a Information on changes made to the safety data sheet The Material Safety Data Sheet (version 3) has been revised in accordance with Annex II as amended by Regulation (EC) No. EC 2015/830.

Section headings are renamed in accordance with Regulation EC No. 830/2015.

Clause 1.3. "Technical function of the substance" is deleted.

Section 1 clause 1.3 "Detailed information for suppliers to whom the safety data sheet is provided". Changes were made in the name and contact information of the manufacturer.

Changes have been made to the legal address of the Special Deputy in the EU countries.

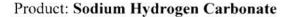
Section 2. Classification and labeling in accordance with DSD is deleted (canceled).

Clause 9.1. Information is adjusted in accordance with Regulation EC № 830/2015.

Section 15. All regulatory documents are specified

Section 16 (c) "Main References" Supplemented with references to information sources.

according to Regulation (EC) No 1907/2006 (REACH), as amended (Annex II, as amended, according to Regulation (EC) No EC 2015/830)





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b	Acronyms and Abbreviations	IUPAC name	This is a unique name assigned to a chemical from among the possible names generated by the IUPAC nomenclature.
		CAS	Chemical Abstracts Service (a service that supports the most comprehensive list of chemicals)
		REACH	Registration, Evaluation, Authorisation and Restriction of Chemicals
		GHS	Globally Harmonized System of Classification and Labelling of Chemicals, developed by the United Nations Organization
		CLP	Regulation (EC) No 1272/2008 on classification, labeling and packaging of substances and mixtures
		LD_{50}	The average lethal dose of toxic substance needed to kill half the members of the test population. One of the most widely used indicators of the danger of toxic and moderately toxic substances.
		LD50	Average lethal concentration mg/ml, causing death in 50% of objects exposed to a toxicant
		NOEC	The maximum inactive concentration of a substance (no observed effect concentration) is the maximum concentration of a substance found experimentally or by observation which does not lead to changes in morphology, functionality, growth, development; absence of a statically significant effect in the group of organisms under study with respect to a reference group being in a normal habitat.
		PBT	Persistence, Bioaccumulation, And Toxicity
		vPvB	Very Persistent And Very Bioaccumulative
		EINECS	European Inventory of Existing Commercial Substances
		ELINCS	European List of Notified Chemical Substances
		MARPOL	International Convention for the Prevention of Pollution from Ships (abbr. of "Marine Pollutant)
		GOST 12.1.005-	Occupational safety standards system General sanitary and hygienic requirements for the air

PDKss The average daily maximum permissible concentration

of harmful substance in the air of populated areas in

 mg/m^3 .

of the working area

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c Main References

- 1. Regulation (EC) No 1272/2008 of the European Parliament and of the Council of the European Union of 16 December 2008, concerning the rules for classification, labeling and packaging of substances and mixtures, the amendment and cancellation of Directives 67/548 / EEC and 1999/45 / EC, and amendments to Regulation (EC) No 1907/2006.
- 2. Regulation (EC) No 1907/2006 of the European Parliament and of the Council of the European Union of December 18, 2006 concerning the rules of registration, assessment, authorization and restriction of chemicals (REACH), the establishment of the European Chemicals Agency.
- 3. Regulation (EC) No 2015/830 Annex II to Regulation (EC) No 1907/2006 establishes the requirements for the preparation of safety data sheets.
- 4. European Commission Directive 2000/39 / EC establishing the first list of indicative workplace exposure limit values at the level of the European Community in implementation.
- 5. Council Directive 98/24 / EC on the protection of the health and safety of workers against the risks associated with working with chemicals.
- 6. Directive 2008/98 / EC of the European Parliament and of the Council of 19 November 2008 on waste.
- 7. EN 374-1:2003 "Protective gloves against chemicals and micro-organisms Part 1: Terminology and performance requirements"
- 8. EN 374-2:2003 "Protective gloves against chemicals and micro-organisms Part 2: Determination of resistance to penetration"
- 9. EN 374-3:2003 "Protective gloves against chemicals and micro-organisms Part 3: Determination of resistance to permeation by chemicals".
- 10. EN 166-2002 Personal eyes protection General specifications (MOD)
- 11. Chemical safety report Sodium carbonate JSC «Soda» (Of the 20th of September 2010).
- 12. https://echa.europa.eu/registration-dossier/-/registered-dossier/16157/2/1.
- 13. OECD SIDS SODIUM BICARBONATE SIDS Initial Assessment Report For SIAM 15 (Boston, USA, 22-25 October 2002)

http://www.curenaturalicancro.com/pdf/sodium-bicarbonate.pdf

Russian Legislation:

- 14. GOST 2156-76 Sodium bicarbonate. Technical specification.
- 15. GOST 12.1.005-88 SSBT. General sanitary and hygienic requirements for the air of the working area

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16. GOST 12.1.007-76 SSBT. Harmful substances. Classification and general safety requirements.

- 17. SanPiN 2.1.6.1032-01. Hygienic requirements for the location and neutralization of production and consumption wastes.
- 18. Rules for transportation of dangerous goods by rail. Approved by the Council for Rail Transport of the Commonwealth Member States, Minutes No. 15 of 05.04.1996.
- e Recommendations for using the information contained in the safety data sheet

The Safety Data Sheet has been prepared in accordance with Article 31 and Annex II of the EU REACH Resolution, the EU Regulation CLP.

Responsible persons receiving this Safety Data Sheet must ensure that persons using, processing, disposing or otherwise contacting the product have read and correctly understood the information contained herein. If the recipient eventually manufactures a formulation containing this product, only the recipient shall be responsible for transferring all relevant information from this Safety Data Sheet to a Safety Data Sheet for their own product.

As stated above, this Safety Data Sheet has been prepared in accordance with applicable European legislation. If you purchase this product outside of Europe where compliance laws may differ, you must obtain a Safety Data Sheet valid for the country in which the product is sold or where it is intended to be used from your local supplier. Please note that the appearance and content of a Safety Data Sheet, even for the same product, may vary from country to country, reflecting various requirements for regulatory compliance.

f Recommendations for Instructions Before using the product, read the Material Safety Data Sheet

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Annex 1

Descriptors of identified use

No. of identified use	Identified use	Sector of Use (SoU)	Product Category (PC)	Process Category (PROC)	Article Category (AC)	Environmental Release Category (ERC)			
			Industrial use	e					
1	Flue gas cleaning	SU 0, 2a, 2b, 4, 5,6a, 6b, 8, 9, 11-15, 18, 20, 23	PC 19, 20	PROC 02, 08b, 15, 22	Not applicable	ERC06b			
2	Manufacture of cleaning agents	SU10	PC 35	PROC 1-5, 8a, 8b, 9,14,15	Not applicable	ERC2			
3	Processing additive to metals and in the metallurgical industry	SU02a	PC 19, 20	PROC 08b, 26	Not applicable	ERC06a, 06b			
4	Pulp and paper production	SU06b	PC 19, 20	PROC 1-5, 08b, 15	Not applicable	ERC 01, 04, 06a, 06b			
5	Other industrial use	SU 0-24	PC 0-40	PROC 1-27b	Not applicable	ERC 01-12b			
Professional use									
6	Professional applications	SU22, SU 1, 4, 5, 6a, 7, 10, 18, 19, 20, 23, 24	PC 0-40	PROC 1-27b	Not applicable	ERC 2, 3, 8a-11b			
Consumer use									
7	End user applications	SU21	PC 0-40	Not applicable	Not applicable	ERC 2, 3, 8a-11b			