JSC AVIABOR

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MATERIAL SAFETY DATA SHEET (MSDS) according to Regulation (EC) No. 1907/2006 Version 2.0 Revision Date 01.06.2015

1.0	Identificatio	n of the substanc	ce/preparation and	of the company/ent	erprise	
1.1	Product nameBoEINECS20CAS11RTECSUS		orane-pyridine 13-773-4 0-51-0 53675000			
1.2	Relevant iden	tified uses of the s	substance or mixture	e and uses advised aga	inst	
	Reducing ager	nt.				
1.3	Details of the supplier of the safety data sheet					
	JSC AVIABOR, Nizhny Novgorod Region					
	606000 Dzerzhinsk, Russia					
	Tel: (+7)-8313-249 727, Fax: (+7)-8313-249 767					
	Only Representative – Espace Chemicals GmbH					
14	Fmergency te) 890779290 – 0, F8 elenhone number ((12. + 49(0) 50 890775 (+7)-8313-249 75076	9290 - 1 30		
1.7			(17)-0515-249 750/ 0.	50		
2.0	Hazards Ide	ntification				
 Irritating to eyes, respiratory system and skin. Toxic in contact with skin and if swallowed. Moisture sensitive. Regulation (EC) No 1272/2008 Annex VI Table 						
	Classifica	ation		Labelling		
Н	lazard Class	Hazard	Pictogram	Hazard Statement	Suppl. Hazard	
aı	nd Category	Statement	Signal Word	Code(s)	statement code(s)	
L .	Code(s)	Code(s)	Code(s)			
Acute	Tox., Inhal., 1	H330		H330	-	
Acute	Tox., Derm, 2	H310 H301		H310 H301		
Acute	70x., Orai, 5	11501	Danger	11501		
2.2	Label element	ts	_			
	4.2 Laber cicilicities Hazard statement(s)					
	H301 Toxic if	f swallowed.				
H310 Fatal in contact with skin.						
H330 Fatal if inhaled.						
Precautionary statement(s)						
P260 Do not breathe dust/fume/gas/mist/vapours/spray. P280 Wear protective gloves/protective clothing						
P260 wear protective gloves/protective clothing. P284 Wear respiratory protection						
P302 + P350 IF ON SKIN: Gently wash with plenty of soap and water.						
P310 Immediately call a POISON CENTER or doctor/physician.						
3.0 Composition/Information on Ingradiants						
5.0			ingitutellis			
	Borane-pyridin	ne :>95 %	wt.			
	Trade names/Synonyms : Borane-pyridine complex, pyridine borane					
	EINECS : 203-773-4					
	Chemical formula $: C_5H_5N \cdot BH_3$					

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	Molar mass Classification	: 92.94 g/mol : Acute Tox. Inhal. 1; Acute Tox. Derm. 2; Acute Tox., Oral, 3 : H330, H310, H301		
	Impurities Pyridine CAS No. EINECS Chemical formula	: $<5\%$ wt. : 110-86-1 : 203-809-9 : C ₅ H ₅ N : 70.1 α /mol		
	Classification	: 79.1 g/mol : Flam. Liq. 2; Acute Tox. 4; Skin Irrit. 2; Eye Irrit. 2; : H225, H302 + H312 + H332, H315, H319		
4.0	First Aid Measures			
4.1	Description of first aid After skin contact Get medical aid immed while removing contam After eyes contact Immediately flush eyes and lower eyelids. Get	d measures iately. Immediately flush skin with plenty of water for at least 15 minutes inated clothing and shoes. with plenty of water for at least 15 minutes, occasionally lifting the upper medical aid immediately.		
	After ingestion Get medical aid immediately. Wash mouth out with water. After inhalation Get medical aid immediately. Remove from exposure and move to fresh air immediately. If not breathing give artificial respiration. If breathing is difficult, give oxygen			
4.2	Most important symptoms and effects, both acute and delayed To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.			
4.3	Indication of immediate medical attention and special treatment needed no data available			
5.0	Fire Fighting Measures			
5.1	Extinguishing media Suitable extinguishing Dry chemical powder o Unsuitable extinguish Water.	g media r carbon dioxide. ing media		
5.2	Special hazards arising from the substance or mixture Nature of decomposition products not known.			
5.3	Precautions for fire-fighters Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes.			
5.4	Further information no data available			
6.0	Accidental Release N	Measures		
6.1	Personal precautions, Wear respiratory protect Evacuate personnel to s	protective equipment and emergency procedures etion. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. safe areas.		
6.2	Environmental precautions Prevent further leakage or spillage if safe to do so. Do not let product enter drains.			
6.3	Methods and material Soak up with inert abso containers for disposal.	Is for containment and cleaning up orbent material and dispose of as hazardous waste. Keep in suitable, closed		

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6.4	Reference to other section For disposal see section 1	ons 3.				
7.0	Handling and Storage					
7.1	Precautions for safe handling Use spark-proof tools and explosion proof equipment. Avoid breathing dust, vapor, mist, or gas.					
7.2	Conditions for safe storage, including any incompatibilities					
7.3	Keep away from sources of ignition. Store in a tightly closed container. Store in a dry, cool, well- ventilated place. Keep under a nitrogen blanket. Handle and store under inert gas. Specific end uses no data available					
8.0	Control of exposure/Pe	ersonal prote	ection			
0.1	Control nonomotors					
0.1	Components with work	place control p	parameters			
8.2	Exposure controls					
	Engineering controls		of a guing and Cofety she	and any both Has only in a		
	chemical fume hood	explosion pro	of equipment. Safety sho	ower and eye bath. Use only in a		
	General hygiene measur	es				
	Wash contaminated clothi	ng before reus	e. Wash thoroughly after	r handling.		
	Personal protective equi	pment				
	Hand Protection	: Governi : Compat	ible chemical-resistant g	loves		
	Eve Protection	: Chemic	al safety goggles.	10 ves.		
	Skin Protection	: Chemic	al resistant apron.			
	Physical and Chemical Properties					
9.0	Physical and Chemical	Properties				
9.0 9.1	Physical and Chemical Information on basic ph	Properties	emical properties			
9.0 9.1	Information on basic phy Form	Properties ysical and che : liquid	emical properties			
9.0 9.1	Information on basic ph Form Colour	Properties ysical and che : liquid : from colour	emical properties			
9.0 9.1	Physical and Chemical Information on basic phy Form Colour Odour	ysical and che : liquid : from colour : specific	emical properties			
9.0 9.1	Physical and Chemical Information on basic phy Form Colour Odour pH	ysical and che : liquid : from colour : specific : 6.8-7.2	emical properties eless to yellow BP/BP Range	: N/A		
9.0 9.1	Physical and Chemical Information on basic phy Form Colour Odour pH MP/MP Range	ysical and che : liquid : from colour : specific : 6.8-7.2 : 10-11°C	emical properties eless to yellow BP/BP Range Flash Point	: N/A : 74 °C		
9.0 9.1	Physical and Chemical Information on basic phy Form Colour Odour pH MP/MP Range Flammability Oxidizing Properties	ysical and che : liquid : from colour : specific : 6.8-7.2 : 10-11°C : N/A	emical properties eless to yellow BP/BP Range Flash Point Autoignition Temp Explosive Properties	: N/A : 74 °C : N/A - N/A		
9.0 9.1	Physical and Chemical Information on basic phy Form Colour Odour pH MP/MP Range Flammability Oxidizing Properties Explosion Limits Lower	ysical and che : liquid : from colour : specific : 6.8-7.2 : 10-11°C : N/A : N/A : N/A	emical properties eless to yellow BP/BP Range Flash Point Autoignition Temp Explosive Properties Vapor Pressure	: N/A : 74 °C : N/A : N/A : 1 mm at 65°C		
9.0 9.1	Physical and Chemical Information on basic phy Form Colour Odour pH MP/MP Range Flammability Oxidizing Properties Explosion Limits Lower SG/Density	ysical and che : liquid : from colour : specific : 6.8-7.2 : 10-11°C : N/A : N/A : N/A : N/A : 0.92 g/cm ³	emical properties eless to yellow BP/BP Range Flash Point Autoignition Temp Explosive Properties Vapor Pressure Partition Coefficient	: N/A : 74 °C : N/A : N/A : 1 mm at 65°C : N/A		
9.0 9.1	Physical and Chemical Information on basic phy Form Colour Odour pH MP/MP Range Flammability Oxidizing Properties Explosion Limits Lower SG/Density Viscosity	ysical and che : liquid : from colour : specific : 6.8-7.2 : 10-11°C : N/A : N/A : N/A : N/A : 0.92 g/cm ³ : N/A	emical properties eless to yellow BP/BP Range Flash Point Autoignition Temp Explosive Properties Vapor Pressure Partition Coefficient Vapor Density	: N/A : 74 °C : N/A : N/A : 1 mm at 65°C : N/A : N/A		
9.0 9.1	Physical and Chemical Information on basic phy Form Colour Odour pH MP/MP Range Flammability Oxidizing Properties Explosion Limits Lower SG/Density Viscosity Saturated Vapor Conc.	ysical and che : liquid : from colour : specific : 6.8-7.2 : 10-11°C : N/A : N/A : N/A : 0.92 g/cm ³ : N/A : N/A : N/A	emical properties eless to yellow BP/BP Range Flash Point Autoignition Temp Explosive Properties Vapor Pressure Partition Coefficient Vapor Density Evaporation Rate	: N/A : 74 °C : N/A : N/A : 1 mm at 65°C : N/A : N/A : N/A		
9.0 9.1	Physical and Chemical Information on basic phy Form Colour Odour pH MP/MP Range Flammability Oxidizing Properties Explosion Limits Lower SG/Density Viscosity Saturated Vapor Conc. Bulk Density	Properties ysical and che : liquid : from colour : specific : 6.8-7.2 : 10-11°C : N/A : N/A : N/A : N/A : 0.92 g/cm ³ : N/A : N/A : N/A : N/A	emical properties emical properties eless to yellow BP/BP Range Flash Point Autoignition Temp Explosive Properties Vapor Pressure Partition Coefficient Vapor Density Evaporation Rate Decomposition Temp.	: N/A : 74 °C : N/A : N/A : 1 mm at 65°C : N/A : N/A : N/A : N/A : 155-160°C		
9.0 9.1	Physical and Chemical Information on basic phy Form Colour Odour pH MP/MP Range Flammability Oxidizing Properties Explosion Limits Lower SG/Density Viscosity Saturated Vapor Conc. Bulk Density Solvent Content	Properties ysical and che : liquid : from colour : specific : 6.8-7.2 : 10-11°C : N/A : N/A	emical properties emical properties eless to yellow BP/BP Range Flash Point Autoignition Temp Explosive Properties Vapor Pressure Partition Coefficient Vapor Density Evaporation Rate Decomposition Temp. Water Content	: N/A : 74 °C : N/A : N/A : 1 mm at 65°C : N/A : N/A : N/A : 155-160°C : N/A		
9.0	Physical and Chemical Information on basic phy Form Colour Odour pH MP/MP Range Flammability Oxidizing Properties Explosion Limits Lower SG/Density Viscosity Saturated Vapor Conc. Bulk Density Solvent Content Surface Tension	ysical and che : liquid : from colour : specific : 6.8-7.2 : 10-11°C : N/A : N/A	emical properties emical properties eless to yellow BP/BP Range Flash Point Autoignition Temp Explosive Properties Vapor Pressure Partition Coefficient Vapor Density Evaporation Rate Decomposition Temp. Water Content Conductivity	: N/A : 74 °C : N/A : N/A : 1 mm at 65°C : N/A : N/A : N/A : 155-160°C : N/A : N/A : N/A		
9.0 9.1	Physical and Chemical Information on basic phy Form Colour Odour pH MP/MP Range Flammability Oxidizing Properties Explosion Limits Lower SG/Density Viscosity Saturated Vapor Conc. Bulk Density Solvent Content Surface Tension Miscellaneous Data Other sofety information	Properties ysical and che : liquid : from colour : specific : 6.8-7.2 : 10-11°C : N/A : N/A	emical properties emical properties eless to yellow BP/BP Range Flash Point Autoignition Temp Explosive Properties Vapor Pressure Partition Coefficient Vapor Density Evaporation Rate Decomposition Temp. Water Content Conductivity	: N/A : 74 °C : N/A : N/A : 1 mm at 65°C : N/A : N/A : N/A : 155-160°C : N/A : N/A : N/A		
9.0 9.1 9.2	Physical and Chemical Information on basic phy Form Colour Odour pH MP/MP Range Flammability Oxidizing Properties Explosion Limits Lower SG/Density Viscosity Saturated Vapor Conc. Bulk Density Solvent Content Surface Tension Miscellaneous Data Other safety information	Propertiesysical and che: liquid: from colour: specific: $6.8-7.2$: $10-11^{\circ}C$: N/A	emical properties eless to yellow BP/BP Range Flash Point Autoignition Temp Explosive Properties Vapor Pressure Partition Coefficient Vapor Density Evaporation Rate Decomposition Temp. Water Content Conductivity e	: N/A : 74 °C : N/A : N/A : 1 mm at 65°C : N/A : N/A : N/A : 155-160°C : N/A : N/A		
9.0 9.1 9.2 10.0	Physical and Chemical Information on basic phy Form Colour Odour pH MP/MP Range Flammability Oxidizing Properties Explosion Limits Lower SG/Density Viscosity Saturated Vapor Conc. Bulk Density Solvent Content Surface Tension Miscellaneous Data Other safety information Stability and Reactivit	Propertiesysical and che: liquid: from colour: specific: $6.8-7.2$: $10-11^{\circ}C$: N/A	emical properties emical properties eless to yellow BP/BP Range Flash Point Autoignition Temp Explosive Properties Vapor Pressure Partition Coefficient Vapor Density Evaporation Rate Decomposition Temp. Water Content Conductivity e	: N/A : 74 °C : N/A : N/A : 1 mm at 65°C : N/A : N/A : N/A : 155-160°C : N/A : N/A : N/A		
9.0 9.1 9.2 9.2 10.0 10.1	Physical and Chemical Information on basic phy Form Colour Odour pH MP/MP Range Flammability Oxidizing Properties Explosion Limits Lower SG/Density Viscosity Saturated Vapor Conc. Bulk Density Solvent Content Surface Tension Miscellaneous Data Other safety information Stability and Reactivit Reactivity no data available	Propertiesysical and che: liquid: from colour: specific: 6.8-7.2: 10-11°C: N/A: N/A	emical properties eless to yellow BP/BP Range Flash Point Autoignition Temp Explosive Properties Vapor Pressure Partition Coefficient Vapor Density Evaporation Rate Decomposition Temp. Water Content Conductivity e	: N/A : 74 °C : N/A : N/A : 1 mm at 65°C : N/A : N/A : N/A : 155-160°C : N/A : N/A		
9.0 9.1 9.2 9.2 10.0 10.1 10.2	Physical and Chemical Information on basic phy Form Colour Odour pH MP/MP Range Flammability Oxidizing Properties Explosion Limits Lower SG/Density Viscosity Saturated Vapor Conc. Bulk Density Solvent Content Surface Tension Miscellaneous Data Other safety information Stability and Reactivit Reactivity no data available Chemical stability	Propertiesysical and che: liquid: from colour: specific: $6.8-7.2$: $10-11^{\circ}C$: N/A: N/A	emical properties eless to yellow BP/BP Range Flash Point Autoignition Temp Explosive Properties Vapor Pressure Partition Coefficient Vapor Density Evaporation Rate Decomposition Temp. Water Content Conductivity e	: N/A : 74 °C : N/A : N/A : 1 mm at 65°C : N/A : N/A : N/A : 155-160°C : N/A : N/A		
9.0 9.1 9.2 9.2 10.0 10.1 10.2	Physical and Chemical Information on basic phy Form Colour Odour pH MP/MP Range Flammability Oxidizing Properties Explosion Limits Lower SG/Density Viscosity Saturated Vapor Conc. Bulk Density Solvent Content Surface Tension Miscellaneous Data Other safety information Stability and Reactivit Reactivity no data available Chemical stability no data available	Properties ysical and che : liquid : from colour : specific : $6.8-7.2$: $10-11^{\circ}C$: N/A :	emical properties emical properties ess to yellow BP/BP Range Flash Point Autoignition Temp Explosive Properties Vapor Pressure Partition Coefficient Vapor Density Evaporation Rate Decomposition Temp. Water Content Conductivity e	: N/A : 74 °C : N/A : N/A : 1 mm at 65°C : N/A : N/A : N/A : 155-160°C : N/A : N/A		
9.0 9.1 9.2 9.2 10.0 10.1 10.2 10.3	Physical and Chemical Information on basic phy Form Colour Odour pH MP/MP Range Flammability Oxidizing Properties Explosion Limits Lower SG/Density Viscosity Saturated Vapor Conc. Bulk Density Solvent Content Surface Tension Miscellaneous Data Other safety information Stability and Reactivit Reactivity no data available Chemical stability no data available Possibility of hazardous	Propertiesysical and che: liquid: from colour: specific: $6.8-7.2$: $10-11^{\circ}C$: N/A	emical properties emical properties eless to yellow BP/BP Range Flash Point Autoignition Temp Explosive Properties Vapor Pressure Partition Coefficient Vapor Density Evaporation Rate Decomposition Temp. Water Content Conductivity e	: N/A : 74 °C : N/A : N/A : 1 mm at 65°C : N/A : N/A : N/A : 155-160°C : N/A : N/A		

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10.4	Conditions to avoid			
10.5	Stable under normal conditions. Unstable above 50 °C. Incomnatible materials			
2000	Acids, acid chlorides, acid anhydrides, oxidizing agents, alcohols.			
10.6	Hazardous decomposition products Borene/boren exides bydrogen carbon monoxide, carbon dioxide, and nitrogen exides			
11.0	Borane/boron oxides, nydrogen, carbon monoxide, carbon dioxide, and nitrogen oxides.			
11.0	Toxicological Information			
11.1	Information on toxicological ef	fects		
	LD_{50} (oral, rat) 95.4 mg/kg	LD ₅₀ (intraperitoneal, rat) 64800 ug/kg		
	LD ₅₀ (skin, guinea pig) 200 mg/k	LD_{50} (intraperitoneal, guinea pig) 54 mg/kg		
	Skin corrosion/irritation			
	Serious eye damage/eye irritation			
	no data available			
	no data available)n		
	Germ cell mutagenicity			
	no data available Genetovicity in vitro. In vitro te	sts have shown mutagenic effects		
	Carcinogenicity	sts have shown mutagenic effects.		
	IARC: No component of this product presents at levels greater than or equal to 0.1% is identified			
	as probable, possible or confirme	ed human carcinogen by IARC.		
	no data available			
	Specific target organ toxicity - single exposure			
	no data available Specific target organ toxicity - repeated exposure			
	no data available			
	Aspiration hazard			
	no data available Potential health effects			
	Inhalation May be fatal if inhaled. May cause respiratory tract irritation.			
	Ingestion Toxic if swallowed.			
	Skin Toxic if absorbed through skin. May cause skin irritation. Eves May cause eve irritation.			
	Signs and symptoms of exposure			
	Symptoms of exposure may include burning sensation, coughing, wheezing, laryngitis, shortness			
	RTECS: US3675000	volniting.		
12.0	Ecological Information			
12.0	Tovicity	· N/A		
12.1	Dorgistones and degradability	• N/A		
12.2	Persistence and degradability			
12.3	Bioaccumulative potential	: N/A		
12.4	Mobility in soil	: N/A		
12.5	PBT and vPvB assessment	: N/A		
12.6	Other adverse effects	: N/A		
13.0	Disposal Consideration			
13.1	Product			

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This combustible material may be burned in a chemical incinerator equipped with an afterburner and scrubber. Observe all federal, state, and local environmental regulations. Contact a licensed professional waste disposal service to dispose of this material.

13.2 Contaminated packaging Dispose of as unused product.

Dispose of as unused produc

14.0 Transport Information

14.1 14.2	UN-Number 2810 UN proper shipping name Toxic liquid, organic, n.o.s (Pyridine borane)					
14.3	Transport hazard class(es)GGVS/GGVE/ADR/RID:6.1, Hazard Identification: 60, Classification: T1, Tunnel Code: (D/E)IMDG/GGVSee-class:6.1, MFAG: 4.2, EmS: F-A, S-A Stowage: BICAO/IATA-class:6.1, PAX: 654, CAO: 662.					
14.4	Packaging group					
- -	GGVS/GGVE/ADR/RID:	II	IMO/GGVSee: II	ICAO/IATA: II		
14.5	Environmental hazards	No	IMO/GGVSaa: No			
14.6	Special precautions for u See section 7.0	ser	100/00/326.10	ICAO/IATA. NO		
14.7	Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code The substance is not intended to be transported in bulk.					
15.0	Regulatory Information	n				

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture no data available

15.2 Chemical Safety Assessment no data available

16.0 Other Information

This material safety data sheet was prepared in compliance with laws, regulations and administrative provisions relative to classification, packaging and labelling of dangerous substances and preparations.

This information is to the best of Aviabor's current knowledge and is intended to describe the product only in terms of health and safety and environmental requirements. Since the conditions of use are outside our control, any recommendations or suggestions are made without guarantee and we disclaim any liability for loss or damage suffered from use of this information. Customers must satisfy themselves that the product is suitable for a particular purpose. Furthermore, nothing contained herein shall be construed as a recommendation to use any product in conflict with existing patents.