KEP Elektronikai Alkatrészgyártó Kft. 7400 Kaposvár, Izzó utca 3. Tel.: +36-82/502-100 Fax: +36-82/502-190					
2018.05.18.		Site:	1/10		
		Version nb	1		



Date Date of revision:

SAFETY DATA SHEET (According to Regulation 2015/830)



SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1. 1. Product identifier

Product name: Samsung INR21700-40T; Lithium Ion Rechargable Battery

Product numbers: 321000980, 321001170

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

Power tool battery pack

1. 3. Details of the supplier of the safety data sheet

Manufacturer/ KEP Elektronikai Alkatrészgyártó Kft.

Supplier: Address: 8700 Marcali, 55 Kossuth Lajos Street

Tel.: +36-82/502-100 Fax: Email: vtep@vtep.videoton.hu

Distributor: KEP Elektronikai Alkatrészgyártó Kft.

Address: 7400 Kaposvár, 3 Izzó Street

Tel.: +36-82/502-100 Fax: Email: vtep@vtep.videoton.hu

Importer/ Metabowerke GmbH

Distributor Address: 72622 Nürtingen, Metabo-Allee 1

Tel.: +49 (0) 7022 - 72 3230 Fax: Email: anwendungsberatung@metabo.de

Responsible for the Safety Metabowerke GmbH

Data Sheet: +49 (0) 7022 - 72 3230 anwendungsberatung@metabo.de

1. 4. Emergency telephone number

EGÉSZSÉGÜGYI TOXIKOLÓGIAI TÁJÉKOZTATÓ SZOLGÁLAT (ETTSZ)

1096 Budapest, Nagyvárad tér 2.

Tel: 06-80-20-11-99 (24 h, for emergency only)

SECTION 2: HAZARDS IDENTIFICATION

2.1. Classification of the substance or mixture

Classification according to 1272/2008/EC

This / these product (s) comply with REACH Article 3 (3). The article does not apply to mandatory labeling requirements for dangerous substances. The product is a CLP Regulation (Classification, Labeling and Packaging Declaration of Materials and Mixtures) does not constitute a substance that is hazardous to health or the environment.

2.2. Label elements

Label elements according to 1272/2008/EC directive

Identity of all substances in the mixture that contribute to the classification of the mixture:

Hazard Statements (H-phrases)

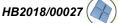
- - Not assigned

Precautionary Statements (P-phrases)

- - Not assigned

Supplemental hazard infomation

2.3. Other hazards



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The litium cell/battery covered in this Data Sheet is hermetically sealed in a stainless steel container and not hazardous if used as recommended by the manufacturer. Under a normal condition of use, the electrode materials and liquid electrolyte contained in a cell/battery are non-reactive provided the battery integrity is maintained. Risk of exposure exists only in case of mechanical, electrical or thermal abuse. Warning: the cells/batteries should not be short circuit, recharged, punctured, incinerated, crushed, immersed in water, forced discharge, or exposed to a temperatures above the declared operation temperature range of the cell or battery. Risk of fire or explosion may occur in the above condition of abuse.

The full text of H phrases see Section 16 point.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.1. Substances

The product is a mixture, not a substance.

3.2. Mixtures

Product Designation and Classification of components Amount identifiers

(You can see full text of H sentences at 16 point.)

	Chemical Name	CAS No.	*Mass range in cell (g/g %)
Electrolyte	Contains Electrolyte salt and solvents.	-	5-20
Electrolyte salt	Lithium hexafluorophosphate	21324-40-3	0.05-5
Electrolyte solvent	Includes one or more of the following;		
•	Ethelyne Carbonate	96-49-1	
	Ethyl methyl	623-53-0	5-20
	Carbonate	616-38-6	
	Diethyl Carbonate	114435-02-8	
	Fluoroethylene		
	Carbonate		
PVDF	Polyvinylidenfluoride	24937-79-9	<1
Copper	Cu	7440-50-8	3-15
Aluminium	Al	7429-90-5	2-10
Cathode	Lithium nickel cobalt aluminium oxide	177997-13-6	20-50
Anode	Graphite	7782-42-5	10-30
Steel, Nickel,	·	Various	Balance

Because of the cell structure the dangerous ingredients will not be available if used properly. During charge process a lithium graphite intercalation phase is formed.

Description

and inert components

Lithium Ion Rechargable Battery:

Name / Type Number of cells Efficiency [Wh]
LiHD 8.0 Ah Battery pack 10 144

SECTION 4: FIRST AID MEASURES

4.1. Description of first aid measures

4.1.1. Inhaling

Expose the person to fresh air and use artificial respiration if needed. Seek medical attention if necessary.

4.1.2. Eyes

Rinse eyes with plenty of water for 15 minutes (remove contact lenses if possible). Seek immediate medical attention.

4.1.3. Skin

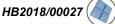
Remove contaminated clothes and rinse skin with plenty of water or take a shower for 15 min. Seek medical attention if necessary.

4.1.4. Swallowed

Rinse mouth with water first and then drink plenty of water. DO NOT induce vomiting. Seek immediate medical attention.

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

See section 11.



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



In case of battery rupture, major leakage or explosion, follow the instructions described above. Provide good ventilation to clear out any corrosive fumes, gases or the pungent odor. Seek immediate medical attention.

SECTION 5: FIREFIGHTING MEASURES

Fire class according to the National Fire Protection Code (54 / 2014. (XII. 5) BM)



Non-flammable class

5.1. Extinguishing media

CO2 extinguishers or copious quantities of water or water-based foam can be used to cool down burning materials that contain or separate lithium batteries, as long as the extent of the fire has not progressed to the point that the lithium metal the batteries contain is exposed.

5.1.1. Unsuitable extinguishing materials

No information available.

5.2. Special hazards arising from the substance or mixture

If possible, remove cell(s) from fire fighting area. If heated above 125°C, cell(s) can explode/vent. Cell is not flammable but internal organic material will burn if the cell is incinerated. Batteries emit toxic hydrogen fluoride fumes when burning, and may eject small amounts of molten metal. Damaged batteries may self-ignite.

5.3. Advice for firefighters

Respiratory protection: In all fire situations, wear self-contained breathing apparatus. Skin protection: Wear protective clothing to prevent body contact with electrolyte solution. Eye protection: Safety glasses are recommended.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

Under a normal condition of use, a battery is hermetically sealed and not hazardous.

In the event of battery rapture and leakage: ventilate the contaminated area.

6.2. Environmental precautions

Keep spill/waste away from water, rain, snow or moisture. Placed them in approved containers and dispose them according to the local, state or federal regulations.

6.3. Methods and material for containment and cleaning up

Cover the spills or leakage with sodium carbonate (Na2CO3) or 1:1 mixture of soda ash and slaked lime.

6.4. Reference to other sections

See Section 7 for information on safe handling. See Section 8 for information on personal protective equipment. See Section 13 for disposal information.

SECTION 7: HANDLING AND STORAGE

7.1. Precautions for safe handling

7.1.1. Technical precautions

Avoid any contact with the contents in case of rupture, leakage or explosion.

Protect from heat, short circuit of terminals, which may induce dangerous elevated temperatures.

7.1.2. Safe handling guidance

Do not short circuit, disassemble, open, alter or directly solder to.

Do not crush, pierce, incinerate or expose to water.

Advice on protection against fire and explosion: Keep away from open flames, hot surfaces and sources of ignition.

7.2. Conditions for safe storage, including any incompatibilities

7.2.1. Technical measures/storage conditions

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Recommended store temperature 20 °C. Store in a dry and ventilated area. Do not place the battery near heating or electrical equipment, nor expose to direct sunlight for a long period. Elevated temperatures can result in shortened battery life and degrade perdormance. Do not store batteries in high humidity environment for a long period.

7.2.2. Incompatible products

Do not store together with oxidizing and acidic materials.

Keep the water away.

Do not store with electrical conductive materials.

7.2.3. Packaging materials

Keep in closed original container.

7.3. Specific end use(s)

Section 1.2. Partially mentioned partial use, no other special use.

SECTION 8: EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1. Control parameters

Limit values of Joint Decree 25/2000 ACGIH TLV:

Component name: AK value (mg/m3) CK value (mg/m3) MK value (mg/m3)

Other

8.2. Exposure controls

Special ventilation is not required when using these products in normal use scenarios. Ventilation is required if there is leakage from the cell or battery.

Other Protective Equipment: Have a safety shower or eye wash station readily available.

Hygiene Measures: Do not eat, drink or smoke in work areas. Avoid storing food, drink or tobacco near the product. Practice and maintain good housekeeping.

Environmental exposure controls: Avoid release to the environment.

8.2.1. Appropriate engineering controls

8.2.2. Individual protection measures, such as personal protective equipment

8.2.2. a) Eye/face protection



In case of leakage or exposure of internal components/materials:

Use Safety goggles, or a face shield with full face protection.

8.2.2. b) Skin protection

In case of leakage or exposure of internal components/materials: Wear long sleeved clothing to avoid skin contact if handling.

8.2.2. b)i. Hand protection



In case of leakage or exposure of internal components/materials:

Use Nitrile or PVC gloves at least 15 mil thick.

8.2.2. c) Respiratory protection



During routine operation, a respirator is not required. However, if dealing with an electrolyte leakage and irritating vapors are generated, an approved half face inorganic vapor and gas/acid/particulate respirator is required.

8.2.2. d) Thermal hazard

Not applicable.

8.2.3. Environmental exposure control

See sections 6, 7, 12, 13.

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SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

9.1. a) Appearance

Consistence: Not available.
Colour: Various

9.1. b) Odour
9.1. c) Odour Threshold
9.1. d) pH-value
9.1. e) Melting point/freezing point
Pungent odor if leaking
None established.
Not available.

9.1. f) Initial boiling point and boiling range Not available.

9.1. g) Flash-point: Not available.
9.1. h) Evaporation rate Not available.
9.1. i) Flammability (solid, gas) Not flammable.

9.1. j) Upper/lower Flammability or explosive limits

- lower:
- upper:

9.1. k) Vapour Pressure (20°C):

Not available.

Not available.

Not available.

Not available.

Not available.

Not available.

9.1. n) Solubility(ies)

- Water: Insoluble
- Other solvents: Not available.

9.1. o) Partition coefficient Not available.

(n-octanol/water):

9.1. p) Auto-ignition temperature Not available.9.1. q) Decomposition Temperature: Not available.

9.1. r) Viscosity: Not applicable to batteries. Not known for the free electrolyte.

9.1. s) Explosive properties Not available.9.1. t) Oxidising properties Not available.

9.2. Other Informations

Specific gravity (water=1), (20°C): Not available.

Other items:

SECTION 10: STABILITY AND REACTIVITY

10.1. Reactivity

Regarding its reaction, the product is not hazardous.

10.2. Chemical stability

The batteries are stable under normal operation and storage conditions.

10.3. Possibility of hazardous reactions

There is no hazardous reaction during the prescribed application.

Hazardous polymerization: will not occur.

10.4. Conditions to avoid

Short-circuiting, recharge, over-discharge, heating over the declared operation temperature range of the product. Keep away from open flames, hot surfaces and sources of ignition. Do not puncture, crush or incinerate.

10.5. Incompatible materials

Water, strong, acid or alkalis solutions, oxidizing agents.

10.6. Hazardous decomposition products

In case of open cells, there is the possibility of hydrofluoric acid and carbon monoxide release. No decomposition if stored and applied as directed.

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SECTION 11: TOXICOLOGICAL INFORMATION

Actual material

Samsung INR21700-40T; Lithium Ion Rechargable Battery

Product numbers: 321000980, 321001170

11.1. Information on toxicological effects

11.1.a. Acute toxicity

Inhalation

Inhalation of vapors from a leaking cell or battery is expected to cause severe irritation of the mouth and upper respiratory tract with a burning sensation, pain, burns and inflammation in the nose and throat; there may also be coughing or difficulty breathing.

According to reports in animals

Oral

The electrolyte contained within the cell or battery is a corrosive liquid. Ingestion of this electrolyte would be harmful. Swallowing may result in nausea, vomiting, diarrhea, abdominal pain and chemical burns to the gastrointestinal tract. During normal usage ingestion should not be a means of exposure.

According to reports in animals

Dermal

The electrolyte contained within the cell or battery is a corrosive liquid and it is expected that it would cause skin burns or severe irritation to the skin if not washed off immediately. Correct handling procedures should minimize the risk of skin irritation. People with pre-existing skin conditions, such as dermatitis, should take extreme care so as not to exacerbate the condition.

According to reports in animals

11.1.b. Skin corrosion/ Skin irritation

The electrolyte contained within the cell or battery is classified as a corrosive liquid and is expected to exhibit Dermal Corrosivity/Irritation.

11.1.c. Serious eye damage/ Eye irritation

The electrolyte contained within the cell or battery is classified as a corrosive liquid and is expected to exhibit serious Damage/Corrosivity.

11.1.d. Respiratory or skin sensitisation

The electrolyte contained within the cell or battery is not expected to be a skin sensitizer according to OECD test 406, based on the available data and the known hazards of the components. The electrolyte contained within the battery is not expected to be a respiratory tract sensitizer, based on the available data and the known hazards of the components.

11.1.e. Germ cell mutagenicity

The electrolyte contained within the cell or battery is not expected to be mutagenic according to test such as OECD tests 471, 475, 476, 478 and 479, based on the available data and the known hazards of the components.

11.1.f. Carcinogenicity

The electrolyte contained within the cell or battery is a corrosive liquid. Ingestion of this electrolyte would be harmful. Swallowing may result in nausea, vomiting, diarrhea, abdominal pain and chemical burns to the gastrointestinal tract. During normal usage ingestion should not be a means of exposure.

11.1.g. Reproductive toxicity

The electrolyte contained within the cell or battery is not expected to be a reproductive hazard according to test such as OECD tests 414 and 421, based on the available data and the known hazards of the components.

11.1.h. Specific target organ toxicity - single

The electrolyte contained within the cell or battery is corrosive and is expect to cause respiratory irritation by inhalation. Inhalation of vapors may lead to severe irritation of the mouth and upper respiratory tract with a burning sensation, pain, burns and inflammation in the nose and throat; there may also be coughing or difficulty breathing.

11.1.i. Specific target organ toxicity — repeated exposure

The cells or batteries are not expected to cause organ damage from prolonged or repeated exposure according to tests such as OECD tests 410 and 412, based on the available data and the known hazards of the components.

11.1.i. Aspiration hazard

The cells or batteries are not classified as an aspiration hazard, based on the available data and the known hazards of the components. However, due to the corrosive nature of the product if swallowed, do NOT induce vomiting. If vomiting has occurred after ingestion the person should be observed to ensure that aspiration into the lungs has not occurred and assessed for chemical burns to the gastrointestinal and respiratory tracts.

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11.2. Delayed and immediate effects as well as chronic effects from short and long-term exposure

Not available.

11.3. Other informations

The hazardous components of the cell or battery are contained within a sealed unit. Under recommended use conditions, the electrode materials and liquid electrolyte are non-reactive provided that the cell or battery integrity remains and the seals remain intact. The potential for exposure should not exist unless the battery leaks, is exposed to high temperature or is mechanically, electrically or physically abused/damaged. The following toxicology data is in respect to if a person comes into contact with the electrolyte.

SECTION 12: ECOLOGICAL INFORMATION

Actual material

Samsung INR21700-40T; Lithium Ion Rechargable Battery

Product numbers: 321000980, 321001170

12.1. Toxicity

12.1.1. Water toxicity

The cell/battery does not present environmental hazard when being properly used or disposed.

The cell/battery does not contain mercury, cadmium, or lead.

The internal components can harm marine environments. Avoid any release to waterways, groundwater, or waste systems.

12.1.2. Terrestrial toxicity

The cell/battery does not present environmental hazard when being properly used or disposed.

12.1.3. Behaviour in waste water treatment plants

The cell/battery does not present environmental hazard when being properly used or disposed.

12.2. Persistence and degradability

12.2.1. General

The cell/battery does not present environmental hazard when being properly used or disposed.

12.2.2. In water

The cell/battery does not present environmental hazard when being properly used or disposed.

12.2.3. In air

The cell/battery does not present environmental hazard when being properly used or disposed.

12.2.4. In soils and sediments

The cell/battery does not present environmental hazard when being properly used or disposed.

12.3. Bioaccumulative potential

The cell/battery does not present environmental hazard when being properly used or disposed.

12.4. Mobility in soil

The cell/battery does not present environmental hazard when being properly used or disposed.

12.5. Results of PBT and vPvB assessment

PBT and vPvB ingredients are not present.

12.6. Other adverse effects

The cell/battery does not present environmental hazard when being properly used or disposed.

SECTION 13: DISPOSAL CONSIDERATIONS

13.1. Waste treatment methods

Waste disposal must be in accordance with the applicable regulations and laws.

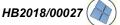
13.2. Package disposal

Disposal of the Lithium batteries should be performed by permitted, professional firms knowledgeable in Federal, State or Local requirements of hazardous waste treatment and hazardous waste transportation.

Incineration should never be performed by battery users, but by trained professional in authorized facilities with proper gas and fume treatment.

Recycling of battery should be done in authorized facilities.

13.3. Waste identification codes



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Packing: 20 01 33* batteries and accumulators included in 16 06 01, 16 06 02 or 16 06 03 and unsorted batteries and accumulators containing these batteries

Residue: 20 01 33* batteries and accumulators included in 16 06 01, 16 06 02 or 16 06 03 and unsorted batteries and accumulators containing these batteries

SECTION 14: TRANSPORT INFORMATION

UN number 3480 14.1.

ADR/ADN/RID

LITHIUM ION BATTERIES Proper shipping name: 14.2.

14.3. Transport hazard class(es):

> Labels: 9A Classification code M4 Packing group: Hazard identification number: 90

14.5. Environmental hazards: NO (E)

Tunnel restriction code:

IMDG

14.4.

Proper shipping name: 14.2. LITHIUM ION BATTERIES

14.3. 9 Transport hazard class(es)

Labels 9A 14.4. Packing group:

F-A, S-I EmS: Marine pollutant: NO

IATA

LITHIUM ION BATTERIES 14.2. Proper shipping name:

14.3. Transport hazard class(es):

Labels 9A 14.4. Packing group:

PAX: Forbidden CAO: 965 Section IA

UN number: 3480

Special precautions for user 14.6.

No information available.

14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable.

SECTION 15: REGULATORY INFORMATION

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

There is no limit according to Annex XVII of REACH. Does not contain substances in the REACH candidate list.

15.2. **Chemical Safety**

Chemical safety assessment has not been performed.

15.3. Seveso category

(219/2011. (X.20.) Korm.rendelet szerint)

It is not covered by SEVESO.

Storage category 15.4.

13 stowage class: Not combustible solid substances

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15.5. WGK - German Water hazard classes

-

15.6. Other relevant national regulations

Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation 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

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

2000 XXV. law Chemical Safety

Decree No. 44/2000 (XII. 27.) of the Minister of Health on the detailed rules of certain procedures and activities related to hazardous substances and hazardous products, as amended by Decree No.

25/2000. (IX. 30.) Joint Decree of the Minister of Health, Ministry of Social and Family Affairs chemical safety of workplaces

54/2014. (XII. 5) Minister of Interior on the National Fire Protection Regulations

1993. XCIII. law occupational protection Act on Occupational Health and Safety at Work Decree 5/1993. (XII.26.) MüM regulations in a uniform structure

Waste: 2012 CLXXXV. Law on waste; 225/2015. (VIII.7.) Government Decree on detailed rules for certain activities related to hazardous waste.

Decree 72/2013 (VIII.27.) Of the Ministry of Agriculture on the Waste List; 442/2012. (XII.29.) On packaging waste and packaging waste management activities.

Road transport Class: 2015 LXXXIX. Law and the European Agreement concerning the International Carriage of Dangerous Goods 61/2013 "A" on certain issues and Annex "B" and the promulgation of the domestic application. NFM Regulation (X.17.); 178/2017. (VII.5.) government decree;

Rail transport: 2015 LXXXIII. International Railway Act, the appendix, the Protocol dated 3 June 1999 amending Transport Convention (COTIF), adopted in Vilnius Annex C promulgation and application of certain aspects of the domestic and the domestic application of the promulgation of 62/2013. NFM Regulation (X.17.); 179/2017. (VII.5.) government decree; Inland transport: the 2015 LXXXIV. Done at Geneva Act, 2000, the day of May 26, Dangerous Goods annexed to the European Agreement concerning the International Inland Waterway (ADN) promulgation of the Rules and domestic application; 177/2017. (VII.5.) government decree;

SECTION 16: OTHER INFORMATION

16.1.a. The review affected this chapters:

16.1.b. The abbreviation and acronyms used in Safety data sheet

REACH Registration, Evaluation, Authorisation and restriction of Chemicals

CSR Chemical Safety Report

ÁK value (permissible average concentration): the average concentration of air pollutant ina workplace air for a shift which does not normally have an adverse effect on the worker's health,

CK value (permissible peak concentration) (shortest allowable maximum air contamination):

MK value (maximum concentration): highest concentration tolerated during shift

OEL Occupational Exposure Limit

DNEL Derived No Effect Level

PNEC Predicted No Effect Concentration

LD50 Lethal Dose 50%

LC50 Lethal Concentration 50%

EC50 Effective Concentration 50%

NOEL No Observable Effect Level

NOEC No Observable Effect Concentration

NOAEC No Observable Adverse Effect Concentration

NOAEL No Observable Adverse Effect Level

STP Sewage Treatment Plant

PBT Persistent, Bioaccumulative, and Toxic

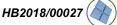
vPvB Very persistent and very bioaccumulative

16.1.c. Key literature references and sources for data

Source: SAMSUNG Safety Data Sheet - Lithium-ion battery INR21700-40T

16.1.d. H- phrases

- - Not assigned



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16.2. Technical advisory services

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16.3. Further information

The data for the hazardous ingredients were taken respectively from the last version of the contractor's safety data sheet. This / these product (s) comply with REACH Article 3 (3). The article does not apply to mandatory labeling requirements for dangerous substances. The product is a CLP Regulation (Classification, Labeling and Packaging Declaration of Materials and Mixtures) does not constitute a substance that is hazardous to health or the environment.

16.4. General information

This information relates TO THE PRODUCT AS SUCH and is in compliance with the specifications of the enterprise. In case of products and mixtures, it should be ensured that no new risks arise.

The information on this data sheet is based on our best knowledge at the time of printing the safety data sheet and is provided in good faith. However, certain data are being reviewed.

Users should note the potential for additional risks in case of using the product for purposes other than the recommended application. This data sheet may be used and reproduced for prevention and safety purposes only. The references to legislation, regulations and practical rules, and documents should not be considered complete.

It is the responsibility of the person receiving the product to consult all documents related to the use and handling of the product.

The responsibility of parties handling the product also includes to pass on the whole of the information listed on the safety data sheet and necessary for work safety and for the protection of health and the environment, to the next person who may get in contact in any way with the product (use, storage, cleaning of containers, other operations).