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Nitric acid ROTIPURAN® 68-70 %, p.a., ACS, ISO

Safety data sheet Safety data sheet

article number: **1C8Y** Version: **GHS 3.0 en** Replaces version of: 2021-12-03 Version: (GHS 2)

SECTION 1: Identification of the substance/mixture and of the company/ undertaking

1.1 Product identifier

Identification of the substance

Article number CAS number Nitric acid ROTIPURAN® 68-70 %, p.a., ACS, ISO

1C8Y

[7697-37-2]

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

Relevant identified uses:

Uses advised against:

Laboratory chemical Laboratory and analytical use

Do not use for squirting or spraying. Do not use for products which come into direct contact with the skin. Do not use for products which come into contact with foodstuffs. Do not use for private purposes (household).

1.3 Details of the supplier of the safety data sheet

Carl Roth GmbH + Co KG Schoemperlenstr. 3-5 D-76185 Karlsruhe Germany

Telephone:+49 (0) 721 - 56 06 0 **Telefax:** +49 (0) 721 - 56 06 149 **e-mail:** sicherheit@carlroth.de **Website:** www.carlroth.de

Competent person responsible for the safety data :Department Health, Safety and Environment sheet:

e-mail (competent person):

sicherheit@carlroth.de

1.4 Emergency telephone number

Name	Street	Postal code/city	Telephone	Website
NSW Poisons Information Centre Childrens Hospital	Hawkesbury Road	2145 West- mead, NSW	131126	

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification acc. to GHS

Section	Hazard class	Cat- egory	Hazard class and category	Hazard statement
2.13	Oxidising liquid	3	Ox. Liq. 3	H272
2.16	Substance or mixture corrosive to metals	1	Met. Corr. 1	H290
3.1I	Acute toxicity (inhal.)	3	Acute Tox. 3	H331

acc. to Safe Work Australia - Code of Practice

Nitric acid ROTIPURAN® 68-70 %, p.a., ACS, ISO



article number: 1C8Y

Section	Hazard class	Cat- egory	Hazard class and category	Hazard statement
3.2	Skin corrosion/irritation	1A	Skin Corr. 1A	H314
3.3	Serious eye damage/eye irritation	1	Eye Dam. 1	H318

Supplemental hazard information

Code	Supplemental hazard information
EUH071	corrosive to the respiratory tract

For full text of abbreviations: see SECTION 16

The most important adverse physicochemical, human health and environmental effects

Skin corrosion produces an irreversible damage to the skin; namely, visible necrosis through the epidermis and into the dermis.

2.2 Label elements

Labelling

Signal word Danger

Pictograms



Hazard statements

H272 H290	May intensify fire; oxidiser May be corrosive to metals
H314	Causes severe skin burns and eye damage
H331	Toxic if inhaled

Precautionary statements

Precautionary statements - prevention

P210	Keep away from heat/sparks/open flames/hot surfaces No smoking
P260	Do not breathe dusts or mists
P280	Wear eye protection/face protection

Precautionary statements - response

P303+P361+P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower
P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing

P370+P378 In case of fire: Use sand, carbon dioxide or powder extinguisher for extinction

Precautionary statements - storage

P403+P233 Store in a well-ventilated place. Keep container tightly closed

Hazardous ingredients for labelling:

Nitric acid ...% [C ≤ 70 %]

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Nitric acid ROTIPURAN® 68-70 %, p.a., ACS, ISO

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article number: 1C8Y

2.3 Other hazards

Results of PBT and vPvB assessment

This mixture does not contain any substances that are assessed to be a PBT or a vPvB.

SECTION 3: Composition/information on ingredients

3.1 Substances

not relevant (mixture)

3.2 Mixtures

Description of the mixture

Name of sub- stance	Identifier	Wt%	Classification acc. to GHS	Pictograms	Notes
Nitric acid% [C ≤ 70 %]	CAS No 7697-37-2	65 - < 70	Ox. Liq. 3 / H272 Met. Corr. 1 / H290 Acute Tox. 3 / H331 Skin Corr. 1A / H314 Eye Dam. 1 / H318 EUH071		B(a)

Notes

B(a): The classification refers to an aqueous solution

For full text of abbreviations: see SECTION 16

SECTION 4: First aid measures

4.1 Description of first aid measures



General notes

Take off immediately all contaminated clothing. Self-protection of the first aider.

Following inhalation

Call a physician immediately. If breathing is irregular or stopped, administer artificial respiration.

Following skin contact

After contact with skin, wash immediately with plenty of water. Immediate medical treatment required because corrosive injuries that are not treated are hard to cure.

Following eye contact

In case of contact with eyes flush immediately with plenty of flowing water for 10 to 15 minutes holding eyelids apart and consult an ophthalmologist. Protect uninjured eye.

Following ingestion

Rinse mouth immediately and drink plenty of water. Call a physician immediately. If swallowed danger of perforation of the esophagus and the stomach (strong corrosive effects).

4.2 Most important symptoms and effects, both acute and delayed

Corrosion, Gastric perforation, Risk of serious damage to eyes, Risk of blindness, Cough, Dyspnoea, Pulmonary oedema

4.3 Indication of any immediate medical attention and special treatment needed

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Nitric acid ROTIPURAN® 68-70 %, p.a., ACS, ISO



article number: 1C8Y

none

SECTION 5: Firefighting measures

5.1 Extinguishing media



Suitable extinguishing media

co-ordinate firefighting measures to the fire surroundings water spray, alcohol resistant foam, dry extinguishing powder, BC-powder, carbon dioxide (CO₂)

Unsuitable extinguishing media

water jet

5.2 Special hazards arising from the substance or mixture

Oxidising property. Non-combustible.

Hazardous combustion products

In case of fire may be liberated: Nitrogen oxides (NOx)

5.3 Advice for firefighters

In case of fire and/or explosion do not breathe fumes. Fight fire with normal precautions from a reasonable distance. Wear self-contained breathing apparatus. Wear full chemical protective clothing.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures



For non-emergency personnel

Use personal protective equipment as required. Avoid contact with skin, eyes and clothes. Do not breathe vapour/spray.

6.2 Environmental precautions

Keep away from drains, surface and ground water. The product is an acid. Before discharge into sewage plants the product normally needs to be neutralised.

6.3 Methods and material for containment and cleaning up

Advice on how to contain a spill

Covering of drains.

Advice on how to clean up a spill

Absorb with liquid-binding material (sand, diatomaceous earth, acid- or universal binding agents).

Other information relating to spills and releases

Place in appropriate containers for disposal. Ventilate affected area.

6.4 Reference to other sections

Hazardous combustion products: see section 5. Personal protective equipment: see section 8. Incompatible materials: see section 10. Disposal considerations: see section 13.

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Nitric acid ROTIPURAN® 68-70 %, p.a., ACS, ISO



article number: 1C8Y

SECTION 7: Handling and storage

Precautions for safe handling 7.1

Provide adequate ventilation as well as local exhaustion at critical locations. Use extractor hood (laboratory). Handle and open container with care. Clear contaminated areas thoroughly.

Measures to prevent fire as well as aerosol and dust generation

Take any precaution to avoid mixing with combustibles.

Advice on general occupational hygiene

Wash hands before breaks and after work.

Conditions for safe storage, including any incompatibilities 7.2

Store in a well-ventilated place. Keep container tightly closed. Keep only in original container. May cause decomposition by long-term light influence.

Incompatible substances or mixtures

Observe hints for combined storage. Keep/store away from clothing/combustible materials. Take any precaution to avoid mixing with combustibles.

Protect against external exposure, such as

UV-radiation/sunlight, contact with air/oxygen

Consideration of other advice:

Store locked up.

Ventilation requirements

Keep any substance that emits harmful vapours or gases in a place that allows these to be permanently extracted.

Specific designs for storage rooms or vessels

Recommended storage temperature: 15 – 25 °C

7.3 Specific end use(s)

No information available.

SECTION 8: Exposure controls/personal protection

8.1 **Control parameters**

National limit values

Occupational exposure limit values (Workplace Exposure Limits)

Cou ntr y	Name of agent	CAS No	Identi- fier	TW A [pp m]	TWA [mg/ m³]	STE L [pp m]	STEL [mg/ m³]	Ceil ing- C [pp m]	Ceil- ing-C [mg/ m³]	Nota- tion	Source
AU	nitric acid	7697-37- 2	WES	2	5.2	4	10				WES

Notation

Ceiling-C

Ceiling value is a limit value above which exposure should not occur Short-term exposure limit: a limit value above which exposure should not occur and which is related to a 15-STEL minute period (unless otherwise specified)

TWA Time-weighted average (long-term exposure limit): measured or calculated in relation to a reference period of 8 hours time-weighted average (unless otherwise specified)

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Nitric acid ROTIPURAN® 68-70 %, p.a., ACS, ISO



article number: 1C8Y

8.2 Exposure controls

Individual protection measures (personal protective equipment)

Eye/face protection



Use safety goggle with side protection. Wear face protection.

Skin protection



hand protection

Wear suitable gloves. Chemical protection gloves are suitable, which are tested according to EN 374. Check leak-tightness/impermeability prior to use. For special purposes, it is recommended to check the resistance to chemicals of the protective gloves mentioned above together with the supplier of these gloves. The times are approximate values from measurements at 22 ° C and permanent contact. Increased temperatures due to heated substances, body heat etc. and a reduction of the effective layer thickness by stretching can lead to a considerable reduction of the breakthrough time. If in doubt, contact manufacturer. At an approx. 1.5 times larger / smaller layer thickness, the respective breakthrough time is doubled / halved. The data apply only to the pure substance. When transferred to substance mixtures, they may only be considered as a guide.

• type of material

FKM (fluoro rubber), Butyl caoutchouc (butyl rubber)

• material thickness

0,7mm

• breakthrough times of the glove material

>480 minutes (permeation: level 6)

other protection measures

Take recovery periods for skin regeneration. Preventive skin protection (barrier creams/ointments) is recommended.

Respiratory protection



Respiratory protection necessary at: Aerosol or mist formation. Type: NO-P3 (against nitrous gases and particles, colour code: Blue/White).

Environmental exposure controls

Keep away from drains, surface and ground water.

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Nitric acid ROTIPURAN® 68-70 %, p.a., ACS, ISO



article number: 1C8Y

SECTION 9: Physical and chemical properties

9.1	Information on basic physical and chemical pro	operties
	Physical state	liquid
	Colour	colourless - light yellow
	Odour	stinging
	Melting point/freezing point	not determined
	Boiling point or initial boiling point and boiling range	120 – 121 °C
	Flammability	non-combustible
	Lower and upper explosion limit	not determined
	Flash point	not determined
	Auto-ignition temperature	not determined
	Decomposition temperature	not relevant
	pH (value)	<1 (20 °C)
	Kinematic viscosity	not determined
	Solubility(ies)	
	Water solubility	miscible in any proportion
	Partition coefficient	
	Partition coefficient n-octanol/water (log value):	not relevant (inorganic)
	Vapour pressure	9 – 9.5 hPa at 20 °C
	Density and/or relative density	
	Density	1.39 – 1.41 ^g / _{cm³} at 20 °C
	Relative vapour density	information on this property is not available
	Particle characteristics	not relevant (liquid)
	Other safety parameters	
	Oxidising properties	oxidiser
9.2	Other information	
	Information with regard to physical hazard classes:	
	Oxidising liquids	
	Spontaneous ignition	Mean pressure rise time is less than or equal to that of a 1:1 mixture, by mass, of 65 % aqueous sodium chlorate solution and cellulose

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Nitric acid ROTIPURAN® 68-70 %, p.a., ACS, ISO

article number: 1C8Y

Corrosive to metals

Other safety characteristics:

Miscibility

completely miscible with water

category 1: corrosive to metals

SECTION 10: Stability and reactivity

10.1 Reactivity

The mixture contains reactive substance(s). Oxidising property. Substance or mixture corrosive to metals.

10.2 Chemical stability

The material is stable under normal ambient and anticipated storage and handling conditions of temperature and pressure.

10.3 Possibility of hazardous reactions

Violent reaction with: Acetone, Aldehydes, Alkali (lye), Alkali metals, Alcohols, Formic acid, Amines, Ammonia (NH3), Aniline, Combustible materials, Dichloromethane, Alkaline earth metal, Acetic anhydride, Hydrazine, Hydrocarbons, Metal powder, Nitriles, Reducing agents, Strong alkali, Hydrogen peroxide,

=> Explosive properties

10.4 Conditions to avoid

UV-radiation/sunlight. Keep away from heat.

10.5 Incompatible materials

combustible materials, Cellulose, different metals

Release of flammable materials with

Metals, Light metals (due to the release of hydrogen in an acid/alkaline medium)

10.6 Hazardous decomposition products

Hazardous combustion products: see section 5.

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Test data are not available for the complete mixture.

Classification procedure

The method for classification of the mixture is based on ingredients of the mixture (additivity formula).

Classification acc. to GHS

Acute toxicity

Toxic if inhaled.

Acute toxicity estimate (ATE) of components of the mixture					
Name of substance	CAS No	Exposure route	ATE		
Nitric acid% [C ≤ 70 %]	7697-37-2	inhalation: vapour	>2.65 ^{mg} /ı/4h		



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Nitric acid ROTIPURAN® 68-70 %, p.a., ACS, ISO



article number: 1C8Y

Acute toxicity of components of the mixture					
Name of substance	CAS No	Exposure route	Endpoint	Value	Species
Nitric acid% [C ≤ 70 %]	7697-37-2	inhalation: va- pour	LC50	>2.65 ^{mg} /ı/4h	rat

Skin corrosion/irritation

Causes severe skin burns and eye damage.

Serious eye damage/eye irritation

Causes serious eye damage.

Respiratory or skin sensitisation

Shall not be classified as a respiratory or skin sensitiser.

Germ cell mutagenicity

Shall not be classified as germ cell mutagenic.

Carcinogenicity

Shall not be classified as carcinogenic.

Reproductive toxicity

Shall not be classified as a reproductive toxicant.

Specific target organ toxicity - single exposure

Shall not be classified as a specific target organ toxicant (single exposure).

Specific target organ toxicity - repeated exposure

Shall not be classified as a specific target organ toxicant (repeated exposure).

Aspiration hazard

Shall not be classified as presenting an aspiration hazard.

Symptoms related to the physical, chemical and toxicological characteristics

• If swallowed

If swallowed danger of perforation of the esophagus and the stomach (strong corrosive effects)

• If in eyes

causes burns, Causes serious eye damage, risk of blindness

If inhaled

corrosive to the respiratory tract, cough, Dyspnoea, pulmonary oedema

• If on skin

causes severe burns, causes poorly healing wounds

• Other information

none

11.2 Endocrine disrupting properties

None of the ingredients are listed.

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Nitric acid ROTIPURAN® 68-70 %, p.a., ACS, ISO

article number: **1C8Y**

SECTION 12: Ecological information

12.1 Toxicity

Shall not be classified as hazardous to the aquatic environment.

12.2 Persistence and degradability

Data are not available.

- **12.3 Bioaccumulative potential** Data are not available.
- **12.4 Mobility in soil** Data are not available.
- **12.5 Results of PBT and vPvB assessment** Data are not available.
- **12.6 Endocrine disrupting properties** None of the ingredients are listed.
- **12.7 Other adverse effects** Data are not available.

SECTION 13: Disposal considerations

13.1 Waste treatment methods



This material and its container must be disposed of as hazardous waste. Dispose of contents/container in accordance with local/regional/national/international regulations.

Sewage disposal-relevant information

Do not empty into drains.

Waste treatment of containers/packagings

Only packagings which are approved (e.g. acc. to the Dangerous Goods Regulations) may be used.

Relevant provisions relating to waste(Basel Convention)

Properties of waste which render it hazardous

H8 Corrosives

13.3 Remarks

Waste shall be separated into the categories that can be handled separately by the local or national waste management facilities. Please consider the relevant national or regional provisions.



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Nitric acid ROTIPURAN® 68-70 %, p.a., ACS, ISO

SECTION 14: Transport information

article number: 1C8Y

14.1	UN number	
	UN RTDG	UN 2031
	IMDG-Code	UN 2031
	ICAO-TI	UN 2031
14.2	UN proper shipping name	
	UN RTDG	NITRIC ACID
	IMDG-Code	NITRIC ACID
	ICAO-TI	Nitric acid
14.3	Transport hazard class(es)	
	UN RTDG	8 (5.1)
	IMDG-Code	8 (5.1)
	ICAO-TI	8 (5.1)
14.4	Packing group	
	UN RTDG	II
	IMDG-Code	II
	ICAO-TI	II
14.5	Environmental hazards	non-environmentally hazardous acc. to the dan- gerous goods regulations
14.6	Special precautions for user	

There is no additional information.

14.7 Transport in bulk according to IMO instruments

The cargo is not intended to be carried in bulk.

14.8 Information for each of the UN Model Regulations Transport informationNational regulationsAdditional information(UN RTDG) **UN number** 2031 8 Class Subsidiary risk(s) 5.1 **Packing group** Π 8+5.1

UN RTDG

E2 UN RTDG

Danger label(s)

5.1	8	
Specia	al provisions (SP)	
Excep	ted quantities (EQ)	



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Nitric acid ROTIPURAN® 68-70 %, p.a., ACS, ISO

article number: 1C8Y

Limited quantities (LQ)	1 L UN RTDG
Emergency Action Code	2R
International Maritime Dangerous Goods Coo	de (IMDG) - Additional information
Proper shipping name	NITRIC ACID
Particulars in the shipper's declaration	UN2031, NITRIC ACID, 8 (5.1), II
Marine pollutant	-
Danger label(s)	8+5.1
Excepted quantities (EQ)	E2
Limited quantities (LQ)	1 L
EmS	F-A, S-Q
Stowage category	D
Segregation group	1 - Acids
International Civil Aviation Organization (ICA	O-IATA/DGR) - Additional information
Proper shipping name	Nitric acid
Particulars in the shipper's declaration	UN2031, Nitric acid, 8 (5.1), II
Danger label(s)	8+5.1
Special provisions (SP)	A1
Excepted quantities (EQ)	EO

SECTION 15: Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture There is no additional information.

National regulations(Australia)

Australian Inventory of Chemical Substances(AICS)

All ingredients are listed or exempt from listing.

Other information

Directive 94/33/EC on the protection of young people at work. Observe employment restrictions under the Maternity Protection Directive (92/85/EEC) for expectant or nursing mothers.

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Nitric acid ROTIPURAN® 68-70 %, p.a., ACS, ISO



article number: 1C8Y

National inventories

Country	Inventory	Status
AU	AIIC	all ingredients are listed
CA	DSL	all ingredients are listed
CN	IECSC	all ingredients are listed
EU	ECSI	all ingredients are listed
EU	REACH Reg.	all ingredients are listed
JP	CSCL-ENCS	all ingredients are listed
KR	KECI	all ingredients are listed
MX	INSQ	all ingredients are listed
NZ	NZIoC	all ingredients are listed
PH	PICCS	all ingredients are listed
TR	CICR	not all ingredients are listed
TW	TCSI	all ingredients are listed
US	TSCA	all ingredients are listed as "ACTIVE"

Legend

Australian Inventory of Industrial Chemicals
Chemical Inventory and Control Regulation
List of Existing and New Chemical Substances (CSCL-ENCS)
Domestic Substances List (DSL)
EC Substance Inventory (EINECS, ELINCS, NLP)
Inventory of Existing Chemical Substances Produced or Imported in China
National Inventory of Chemical Substances
Korea Existing Chemicals Inventory
New Zealand Inventory of Chemicals
Philippine Inventory of Chemicals and Chemical Substances (PICCS)
. REACH registered substances
Taiwan Chemical Substance Inventory
Toxic Substance Control Act

15.2 Chemical Safety Assessment

Chemical safety assessments for substances in this mixture were not carried out.

SECTION 16: Other information

Indication of changes (revised safety data sheet)

Section	Former entry (text/value)	Actual entry (text/value)	Safety- relev- ant
2.2	Supplemental hazard information		yes
2.2		Supplemental hazard information: change in the listing (table)	yes
14.8		Emergency Action Code: 2R	yes
15.1		National inventories: change in the listing (table)	yes

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Nitric acid ROTIPURAN® 68-70 %, p.a., ACS, ISO



article number: 1C8Y

Abbreviations and acronyms

Abbr.	Descriptions of used abbreviations	
Acute Tox.	Acute toxicity	
ATE	Acute Toxicity Estimate	
CAS	Chemical Abstracts Service (service that maintains the most comprehensive list of chemical substances)	
Ceiling-C	Ceiling value	
DGR	Dangerous Goods Regulations (see IATA/DGR)	
EINECS	European Inventory of Existing Commercial Chemical Substances	
ELINCS	European List of Notified Chemical Substances	
EmS	Emergency Schedule	
Eye Dam.	Seriously damaging to the eye	
Eye Irrit.	Irritant to the eye	
GHS	"Globally Harmonized System of Classification and Labelling of Chemicals" developed by the United Na- tions	
IATA	International Air Transport Association	
IATA/DGR	Dangerous Goods Regulations (DGR) for the air transport (IATA)	
ICAO	International Civil Aviation Organization	
ICAO-TI	Technical instructions for the safe transport of dangerous goods by air	
IMDG	International Maritime Dangerous Goods Code	
IMDG-Code	International Maritime Dangerous Goods Code	
LC50	Lethal Concentration 50%: the LC50 corresponds to the concentration of a tested substance causing 50 % lethality during a specified time interval	
Met. Corr.	Substance or mixture corrosive to metals	
NLP	No-Longer Polymer	
Ox. Liq.	Oxidising liquid	
PBT	Persistent, Bioaccumulative and Toxic	
ppm	Parts per million	
Skin Corr.	Corrosive to skin	
Skin Irrit.	Irritant to skin	
STEL	Short-term exposure limit	
TWA	Time-weighted average	
UN RTDG	UN Recommendations on the Transport of Dangerous Good	
vPvB	Very Persistent and very Bioaccumulative	
WES	Safe Work Australia: Workplace exposure standards for airborne contaminants	

Key literature references and sources for data

Safe Work Australia's Code of Practice for Labelling of Workplace Hazardous Chemicals (under WHS Regulations).

acc. to Safe Work Australia - Code of Practice

Nitric acid ROTIPURAN® 68-70 %, p.a., ACS, ISO



article number: 1C8Y

UN Recommendations on the Transport of Dangerous Good. International Maritime Dangerous Goods Code (IMDG). Dangerous Goods Regulations (DGR) for the air transport (IATA).

Classification procedure

Physical and chemical properties. The classification is based on tested mixture. Health hazards. Environmental hazards. The method for classification of the mixture is based on ingredients of the mixture (additivity formula).

List of relevant phrases (code and full text as stated in section 2 and 3)

Code	Text
H272	May intensify fire; oxidiser.
H290	May be corrosive to metals.
H314	Causes severe skin burns and eye damage.
H318	Causes serious eye damage.
H331	Toxic if inhaled.

Disclaimer

This information is based upon the present state of our knowledge. This SDS has been compiled and is solely intended for this product.