acc. to Regulation (EC) No. 1907/2006 (REACH)

ROTH

Orange terpenes, ROTI®Histol, ready-to-use, for histology

article number: **6640**Version: **6.0 en**date of compilation: 2017-02-06
Revision: 2024-03-02

Replaces version of: 2023-07-28

Version: (5)

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

1.1 Product identifier

Identification of the substance **Orange terpenes**, ROTI®Histol, ready-to-use, for

histology

Article number 6640

EC number 232-433-8 CAS number 8028-48-6

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

Relevant identified uses: Laboratory chemical

Laboratory and analytical use

Uses advised against: Do not use for products which come into contact

with foodstuffs. Do not use for private purposes (household). Food, drink and animal feeding-

stuffs.

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

sheet:

e-mail (competent person): sicherheit@carlroth.de

1.4 Emergency telephone number

Name	Street	Postal code/city	Telephone	Website
National Poisons Information Service City Hospital	Dudley Rd	B187QH Birmingham	844 892 0111	

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification acc. to GHS

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Section	Hazard class	Cat- egory	Hazard class and category	Hazard statement
2.6	Flammable liquid	3	Flam. Liq. 3	H226
3.2	Skin corrosion/irritation	2	Skin Irrit. 2	H315
3.45	Skin sensitisation	1	Skin Sens. 1	H317
3.10	Aspiration hazard	1	Asp. Tox. 1	H304
4.1C	Hazardous to the aquatic environment - chronic hazard	2	Aquatic Chronic 2	H411

For full text of abbreviations: see SECTION 16

The most important adverse physicochemical, human health and environmental effects

The product is combustible and can be ignited by potential ignition sources. Spillage and fire water can cause pollution of watercourses.

2.2 Label elements

Labelling

Signal word Danger

Pictograms

GHS02, GHS07, GHS08, GHS09









Hazard statements

H226	Flammable liquid and vapour
H304	May be fatal if swallowed and enters airways
H315	Causes skin irritation
H317	May cause an allergic skin reaction
H411	Toxic to aquatic life with long lasting effects

Precautionary statements

Precautionary statements - prevention

P210	Keep away from heat. No smoking
P273	Avoid release to the environment
P280	Wear protective gloves/eye protection

Precautionary statements - response

P301+P310	IF SWALLOWED: Immediately call a POISON CENTER/doctor
P331	Do NOT induce vomiting
D222 - D242	

P333+P313 If skin irritation or rash occurs: Get medical advice/attention

2.3 Other hazards

Results of PBT and vPvB assessment

According to the results of its assessment, this substance is not a PBT or a vPvB.

Endocrine disrupting properties

Does not contain an endocrine disruptor (ED) at a concentration of \geq 0,1%.

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SECTION 3: Composition/information on ingredients

3.1 Substances

"UVCB substance" (substance of unknown or variable composition).

Name of substance Orange terpenes

CAS No 8028-48-6 EC No 232-433-8

SECTION 4: First aid measures

4.1 Description of first aid measures



General notes

Take off contaminated clothing.

Following inhalation

Provide fresh air. In all cases of doubt, or when symptoms persist, seek medical advice.

Following skin contact

Rinse skin with water/shower. In all cases of doubt, or when symptoms persist, seek medical advice.

Following eye contact

Rinse cautiously with water for several minutes. In all cases of doubt, or when symptoms persist, seek medical advice.

Following ingestion

Call a physician immediately. Observe aspiration hazard if vomiting occurs.

4.2 Most important symptoms and effects, both acute and delayed

Aspiration hazard, Irritation, Allergic reactions

4.3 Indication of any immediate medical attention and special treatment needed

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

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5.2 Special hazards arising from the substance or mixture

Combustible. In case of insufficient ventilation and/or in use, may form flammable/explosive vapour-air mixture. Solvent vapours are heavier than air and may spread along floors. Places which are not ventilated, e.g. unventilated below ground level areas such as trenches, conduits and shafts, are particularly prone to the presence of flammable substances or mixtures. Vapours may form explosive mixtures with air.

Hazardous combustion products

Carbon monoxide (CO), Carbon dioxide (CO₂), May produce toxic fumes of carbon monoxide if burning.

5.3 Advice for firefighters

In case of fire and/or explosion do not breathe fumes. Do not allow firefighting water to enter drains or water courses. Fight fire with normal precautions from a reasonable distance. Wear self-contained breathing apparatus.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures



For non-emergency personnel

Avoid contact with skin, eyes and clothes. Do not breathe vapour/spray. Avoidance of ignition sources.

6.2 Environmental precautions

Keep away from drains, surface and ground water. Retain contaminated washing water and dispose of it. If substance has entered a water course or sewer, inform the responsible authority.

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.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Provision of sufficient ventilation.

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Measures to prevent fire as well as aerosol and dust generation



Keep away from sources of ignition - No smoking.

Take precautionary measures against static discharge.

Measures to protect the environment

Avoid release to the environment.

Advice on general occupational hygiene

Wash hands before breaks and after work. Keep away from food, drink and animal feedingstuffs. When using do not smoke.

7.2 Conditions for safe storage, including any incompatibilities

Store in a well-ventilated place. Keep container tightly closed. Protect from sunlight.

Incompatible substances or mixtures

Observe hints for combined storage.

Consideration of other advice:

Ground/bond container and receiving equipment.

Ventilation requirements

Use local and general ventilation.

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)

This information is not available.

Human health values

Relevant DNELs and other threshold levels

Endpoint	Threshold level	Protection goal, route of exposure	Used in	Exposure time
DNEL	31,1 mg/m³	human, inhalatory	worker (industry)	chronic - systemic effects
DNEL	8,89 mg/kg bw/ day	human, dermal	worker (industry)	chronic - systemic effects
DNEL	185,8 μg/cm²	human, dermal	worker (industry)	acute - local effects

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Environmental values

Relevant PNECs and other threshold levels

End- point	Threshold level	Organism	Environmental com- partment	Exposure time
PNEC	5,4 ^{µg} / _l	aquatic organisms	freshwater	short-term (single instance)
PNEC	0,54 ^{µg} / _l	aquatic organisms	marine water	short-term (single instance)
PNEC	2,1 ^{mg} / _l	aquatic organisms	sewage treatment plant (STP)	short-term (single instance)
PNEC	1,3 ^{mg} / _{kg}	aquatic organisms	freshwater sediment	short-term (single instance)
PNEC	0,13 ^{mg} / _{kg}	aquatic organisms	marine sediment	short-term (single instance)
PNEC	0,261 ^{mg} / _{kg}	terrestrial organisms	soil	short-term (single instance)

8.2 Exposure controls

Individual protection measures (personal protective equipment)

Eye/face protection





Use safety goggle with side protection.

Skin protection





hand protection

Wear suitable gloves. Chemical protection gloves are suitable, which are tested according to EN 374. 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

NBR (Nitrile rubber)

material thickness

≥0,3 mm

• 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.

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Respiratory protection





Respiratory protection necessary at: Aerosol or mist formation. Type: A (against organic gases and vapours with a boiling point of > 65 °C , colour code: Brown).

Environmental exposure controls

Keep away from drains, surface and ground water.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Physical state liquid
Colour clear
Odour fruity

Melting point/freezing point <-25 °C (ECHA)

Boiling point or initial boiling point and boiling

range

160 °C at 1.026 hPa (ECHA)

Flammability flammable liquid in accordance with GHS criteria

Lower and upper explosion limit 0,7 vol% (LEL) - 6,1 vol% (UEL)

Flash point 53,4 °C (ECHA)

Auto-ignition temperature 235 °C at 1.016 hPa (ECHA)

Decomposition temperature not relevant pH (value) not determined Kinematic viscosity $1,17 \, ^{mm^2}/_s$ at 20 °C Dynamic viscosity 0,99 mPa s at 20 °C

Solubility(ies)

Water solubility $\leq 1,767 \,^{9}/_{1}$ at 25 °C (ECHA)

Partition coefficient

Partition coefficient n-octanol/water (log value): 2,78 – 4,88 (ECHA)

Vapour pressure 1,9 hPa at 25 °C

Density and/or relative density

Density $0.846 \, ^{9}/_{cm^3}$ at 20 °C (ECHA)

Relative vapour density Information on this property is not available.

Particle characteristics not relevant (liquid)

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Other safety parameters

Oxidising properties none

9.2 Other information

Information with regard to physical hazard

classes:

There is no additional information.

Other safety characteristics:

Refractive index 1,468 – 1,478

SECTION 10: Stability and reactivity

10.1 Reactivity

It's a reactive substance. Risk of ignition.

If heated

Risk of ignition. Vapours may form explosive mixtures with air.

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: strong oxidiser, Acids

10.4 Conditions to avoid

Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

10.5 Incompatible materials

Rubber articles, different plastics

10.6 Hazardous decomposition products

Hazardous combustion products: see section 5.

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Classification acc. to GHS

Acute toxicity

Shall not be classified as acutely toxic.

Acute toxicity

Exposure route	Endpoint	Value	Species	Method	Source
oral	LD50	>5.000 ^{mg} / _{kg}	rat		ECHA
dermal	LD50	>5.000 ^{mg} / _{kg}	rabbit		ECHA

Skin corrosion/irritation

Causes skin irritation.

Serious eye damage/eye irritation

Shall not be classified as seriously damaging to the eye or eye irritant.

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Respiratory or skin sensitisation

May cause an allergic skin reaction.

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

May be fatal if swallowed and enters airways.

Symptoms related to the physical, chemical and toxicological characteristics

If swallowed

vomiting, nausea, gastrointestinal complaints, aspiration hazard

If in eyes

slightly irritant but not relevant for classification

• If inhaled

slightly irritant but not relevant for classification

• If on skin

causes skin irritation, May produce an allergic reaction, pruritis, localised redness

Other information

none

11.2 Endocrine disrupting properties

Does not contain an endocrine disruptor (ED) at a concentration of $\geq 0.1\%$.

11.3 Information on other hazards

There is no additional information.

SECTION 12: Ecological information

12.1 Toxicity

Toxic to aquatic life with long lasting effects.

12.2 Persistence and degradability

Biodegradation

The substance is readily biodegradable.

12.3 Bioaccumulative potential

Does not significantly accumulate in organisms.

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n-octanol/water (log KOW)	2,78 – 4,88 (ECHA)
BCF	32 – 156 (ECHA)

12.4 Mobility in soil

Data are not available.

12.5 Results of PBT and vPvB assessment

According to the results of its assessment, this substance is not a PBT or a vPvB.

12.6 Endocrine disrupting properties

Does not contain an endocrine disruptor (ED) at a concentration of \geq 0,1%.

12.7 Other adverse effects

Data are not available.

SECTION 13: Disposal considerations

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. Avoid release to the environment. Refer to special instructions/safety data sheets.

Waste treatment of containers/packagings

It is a dangerous waste; only packagings which are approved (e.g. acc. to ADR) may be used. Handle contaminated packages in the same way as the substance itself. Completely emptied packages can be recycled.

13.2 Relevant provisions relating to waste

The allocation of waste identity numbers/waste descriptions must be carried out according to the EEC, specific to the industry and process.

Properties of waste which render it hazardous

HP3 flammable

irritant - skin irritation and eye damage **HP 4**

specific target organ toxicity (STOT)/aspiration toxicity HP 5

HP 13 HP 14 sensitising

ecotoxic

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. Non-contaminated packages may be recycled.

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SECTION 14: Transport information

14.1 UN number or ID number

ADRRID UN 2319
IMDG-Code UN 2319
ICAO-TI UN 2319

14.2 UN proper shipping name

ADRRID TERPENE HYDROCARBONS, N.O.S. IMDG-Code TERPENE HYDROCARBONS, N.O.S. ICAO-TI Terpene hydrocarbons, n.o.s.

14.3 Transport hazard class(es)

ADRRID 3
IMDG-Code 3
ICAO-TI 3

14.4 Packing group

ADRRID III
IMDG-Code III
ICAO-TI III

14.5 Environmental hazards hazardous to the aquatic environment

14.6 Special precautions for user

Provisions for dangerous goods (ADR) should be complied within the premises.

14.7 Maritime 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

Agreement concerning the International Carriage of Dangerous Goods by Road (ADR)Additional information

Proper shipping name TERPENE HYDROCARBONS, N.O.S.

Particulars in the transport document UN2319, TERPENE HYDROCARBONS, N.O.S., 3, III,

(D/E), environmentally hazardous

Classification code F1

Danger label(s) 3, "Fish and tree"





Environmental hazards yes (hazardous to the aquatic environment)

Excepted quantities (EQ) E1
Limited quantities (LQ) 5 L
Transport category (TC) 3

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Tunnel restriction code (TRC)

Hazard identification No

Emergency Action Code

30

Regulations concerning the International Carriage of Dangerous Goods by Rail (RID)Additional

information

Classification code F1

Danger label(s) 3, "Fish and tree"





Environmental hazards Yes

Hazardous to water

Excepted quantities (EQ) E1
Limited quantities (LQ) 5 L
Transport category (TC) 3
Hazard identification No 30

International Maritime Dangerous Goods Code (IMDG) - Additional information

Proper shipping name TERPENE HYDROCARBONS, N.O.S.

Particulars in the shipper's declaration UN2319, TERPENE HYDROCARBONS, N.O.S., 3, III,

53,4°C c.c., MARINE POLLUTANT

Marine pollutant yes (hazardous to the aquatic environment)

Danger label(s) 3, "Fish and tree"





Special provisions (SP)

Excepted quantities (EQ) E1
Limited quantities (LQ) 5 L

EmS F-E, S-D

Stowage category A

International Civil Aviation Organization (ICAO-IATA/DGR) - Additional information

Proper shipping name Terpene hydrocarbons, n.o.s.

Particulars in the shipper's declaration UN2319, Terpene hydrocarbons, n.o.s., 3, III

Environmental hazards yes (hazardous to the aquatic environment)

Danger label(s) 3



Excepted quantities (EQ) E1
Limited quantities (LQ) 10 L

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SECTION 15: Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture Relevant provisions of the European Union (EU)

Seveso Directive

2012/	2012/18/EU (Seveso III)					
No	Dangerous substance/hazard categories	Qualifying quantity (t plication of lower a quirem	nd upper-tier re-	Notes		
E2	environmental hazards (hazardous to the aquatic environment, cat. 2)	200	500	57)		

Notation

57) Hazardous to the Aquatic Environment in category Chronic 2

Deco-Paint Directive

VOC content	100 %
VOC content	846 ^g / _l

Industrial Emissions Directive (IED)

VOC content	100 %
VOC content	846 ^g / _l

Directive on the restriction of the use of certain hazardous substances in electrical and electronic equipment (RoHS)

not listed

Regulation concerning the establishment of a European Pollutant Release and Transfer Register (PRTR)

not listed

Water Framework Directive (WFD)

not listed

Regulation on the marketing and use of explosives precursors

not listed

Regulation on drug precursors

not listed

Regulation on substances that deplete the ozone layer (ODS)

not listed

Regulation concerning the export and import of hazardous chemicals (PIC)

not listed

Regulation on persistent organic pollutants (POP)

not listed

National regulations(GB)

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List of substances subject to authorisation (GB REACH, Annex 14) / SVHC - candidate list

not listed

Restrictions according to GB REACH, Annex 17

Dangerous	substances	with rost	rictions (CB DEACH	Anney 17)
Dalluel Ous	Substances	WILLI I COL		OD REACH.	

Name of substance	Name acc. to inventory	CAS No	No
Orange terpenes	this product meets the criteria for classi- fication in accordance with Regulation No 1272/2008/EC		3
Orange terpenes	flammable / pyrophoric		40

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.

National inventories

Country	Inventory	Status
AU	AIIC	substance is listed
CA	DSL	substance is listed
CN	IECSC	substance is listed
EU	ECSI	substance is listed
EU	REACH Reg.	substance is listed
KR	KECI	substance is listed
MX	INSQ	substance is listed
NZ	NZIoC	substance is listed
PH	PICCS	substance is listed
TR	CICR	substance is listed
TW	TCSI	substance is listed
VN	NCI	substance is listed

Legend

Australian Inventory of Industrial Chemicals Chemical Inventory and Control Regulation AIIC CICR DSL ECSI IECSC INSQ CICR Chemical Inventory and Control Regulation
DSL Domestic Substances List (DSL)
ECSI EC Substance Inventory (EINECS, ELINCS, NLP)
IECSC Inventory of Existing Chemical Substances Produced or Imported in China
INSQ National Inventory of Chemical Substances
KECI Korea Existing Chemicals Inventory
NCI National Chemical Inventory
NZIOC New Zealand Inventory of Chemicals
PICCS Philippine Inventory of Chemicals and Chemical Substances (PICCS)
REACH Reg. REACH registered substances
TCSI Taiwan Chemical Substance Inventory

Taiwan Chemical Substance Inventory

15.2 Chemical safety assessment

No Chemical Safety Assessment has been carried out for this substance.

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SECTION 16: Other information

Indication of changes (revised safety data sheet)

Section	Former entry (text/value)	Actual entry (text/value)	Safety- relev- ant
2.3	Endocrine disrupting properties: Does not contain an endocrine disruptor (EDC) in a concentration of ≥ 0,1%.	Endocrine disrupting properties: Does not contain an endocrine disruptor (ED) at a concentration of ≥ 0,1%.	yes

Abbreviations and acronyms

Abbr.	Descriptions of used abbreviations
ADR	Accord relatif au transport international des marchandises dangereuses par route (Agreement concern- ing the International Carriage of Dangerous Goods by Road)
BCF	Bioconcentration factor
CAS	Chemical Abstracts Service (service that maintains the most comprehensive list of chemical substances)
DGR	Dangerous Goods Regulations (see IATA/DGR)
DNEL	Derived No-Effect Level
EC No	The EC Inventory (EINECS, ELINCS and the NLP-list) is the source for the seven-digit EC number, an identifier of substances commercially available within the EU (European Union)
ED	Endocrine disruptor
EINECS	European Inventory of Existing Commercial Chemical Substances
ELINCS	European List of Notified Chemical Substances
EmS	Emergency Schedule
GB REACH	The REACH etc. (Amendment etc.) (EU Exit) Regulations 2019, SI 2019/758 (as amended)
GHS	"Globally Harmonized System of Classification and Labelling of Chemicals" developed by the United Nations
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
LD50	Lethal Dose 50 %: the LD50 corresponds to the dose of a tested substance causing 50 % lethality during a specified time interval
LEL	Lower explosion limit (LEL)
NLP	No-Longer Polymer
PBT	Persistent, Bioaccumulative and Toxic
PNEC	Predicted No-Effect Concentration
REACH	Registration, Evaluation, Authorisation and Restriction of Chemicals
RID	Règlement concernant le transport International ferroviaire des marchandises Dangereuses (Regula- tions concerning the International carriage of Dangerous goods by Rail)

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Abbr.	Descriptions of used abbreviations	
UEL	Upper explosion limit (UEL)	
VOC	Volatile Organic Compounds	
vPvB	Very Persistent and very Bioaccumulative	

Key literature references and sources for data

Agreement concerning the International Carriage of Dangerous Goods by Road (ADR). Regulations concerning the International Carriage of Dangerous Goods by Rail (RID). International Maritime Dangerous Goods Code (IMDG). Dangerous Goods Regulations (DGR) for the air transport (IATA).

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

Code	Text
H226	Flammable liquid and vapour.
H304	May be fatal if swallowed and enters airways.
H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H411	Toxic to aquatic life with long lasting effects.

Disclaimer

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

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