

Version 2.3	n Revision Date: 2024/03/13	nal	S Number (Inter- ): 0000000004	MSDS number: AA00974-0000000490 Date of last issue: 2024/02/29 Date of first issue: 2017/03/08
1. PRC	DUCT AND COMPANY I	DENT	IFICATION	
Pi	oduct name	:	APS	
R	mended use of the chemic ecommended use anufacturer or supplier's	:	Oxidizing agent polymerisation ir	
C	ompany	:	United Initiators	GmbH
A	ddress	:	DrGustav-Adolp 82049 Pullach	h-Str. 3
Te	lephone	:	+49 / 89 / 74422	- 0
E	mergency telephone numbe	er :	+82-02-6245-161	0
E	mail address	:	contact@united-i	n.com

## 2. HAZARDS IDENTIFICATION

GHS Classification Oxidizing solids	:	Category 3
Acute toxicity (Oral)	:	Category 4
Skin corrosion/irritation	:	Category 2
Serious eye damage/eye irri- tation	:	Category 2A
Respiratory sensitisation	:	Category 1
Skin sensitisation	:	Category 1
Specific target organ toxicity - single exposure	:	Category 3 (respiratory tract irritation)

## GHS label elements



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Hazaro	d pictograms		
Signal	word	: Danger	
Hazaro	d statements	H302 Harmful if H315 Causes sl H317 May cause H319 Causes so H334 May cause difficulties if inha	kin irritation. e an allergic skin reaction. erious eye irritation. e allergy or asthma symptoms or breathing
Preca	utionary statements	and other ignitio P220 Keep/ Sto P261 Avoid brea P264 Wash skir P270 Do not eat P271 Use only o P272 Contamina the workplace. P280 Wear protection/ face protection/ face protection/	a thoroughly after handling. t, drink or smoke when using this product. butdoors or in a well-ventilated area. ated work clothing should not be allowed out of ective gloves/ protective clothing/ eye protec-
		CENTER/ docto P302 + P352 IF P304 + P340 + and keep comfo doctor if you fee P305 + P351 + for several minu easy to do. Conf P321 Specific tr on this label). P333 + P313 If vice/ attention. P337 + P313 If tention. P342 + P311 If POISON CENTE P362 + P364 Ta reuse.	P338 IF IN EYES: Rinse cautiously with water tes. Remove contact lenses, if present and tinue rinsing. eatment (see supplemental first aid instructions skin irritation or rash occurs: Get medical ad- eye irritation persists: Get medical advice/ at- experiencing respiratory symptoms: Call a



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### Storage:

P403 + P233 Store in a well-ventilated place. Keep container tightly closed. P405 Store locked up.

## Disposal:

P501 Dispose of contents/ container according to waste-related laws

## Other hazards which do not result in classification

May cause fire or explosion; strong oxidizer.

### 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture	: Substance
Chemical nature	: Persulphate Solid

### Components

Chemical name	Common Name	CAS-No.	Concentration (% w/w)
Ammonium persulphate	Ammonium persulphate	7727-54-0	<= 100

### 4. FIRST AID MEASURES

General advice	<ul> <li>Take off contaminated clothing and shoes immediately.</li> <li>Call a physician immediately.</li> <li>Never give anything by mouth to an unconscious person.</li> <li>If unconscious, place in recovery position and seek medical advice.</li> <li>Move out of dangerous area.</li> <li>Show this safety data sheet to the doctor in attendance.</li> <li>Do not leave the victim unattended.</li> <li>Symptoms of poisoning may appear several hours later.</li> </ul>
In case of eye contact	Small amounts splashed into eyes can cause irreversible tis- sue damage and blindness. In the case of contact with eyes, rinse immediately with plenty of water and seek medical advice. Remove contact lenses. Protect unharmed eye. Keep eye wide open while rinsing.



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		If eye irritat	on persists, consult a specialist.			
In c	In case of skin contact		If symptoms persist, call a physician. In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash contaminated clothing before re-use. If on skin, rinse well with water. If on clothes, remove clothes.			
lf ir	If inhaled		oxygen if breathing is difficult or cyanosis is ob- in, move person into fresh air. ing, give artificial respiration. ician or poison control centre immediately. bus, place in recovery position and seek medical atory tract clear.			
lf s	wallowed	Rinse mout Keep respir	ician immediately. h thoroughly with water. atory tract clear. s persist, call a physician.			
and	st important symptoms l effects, both acute and ayed	Causes ser May cause ties if inhale	n irritation. an allergic skin reaction. ious eye irritation. allergy or asthma symptoms or breathing difficul- ed. respiratory irritation.			
Pro	tection of first-aiders		sponders should pay attention to self-protection recommended protective clothing			
Not	es to physician	: Treat symp	tomatically and supportively.			

## 5. FIREFIGHTING MEASURES

## Suitable and unsuitable extinguishing media

Suitable extinguishing media	:	Foam Water spray jet
Unsuitable extinguishing media	:	High volume water jet
Specific hazards during fire- fighting	:	Contact with incompatible materials or exposure to tempera- tures exceeding SADT may result in a self-accelerating de- composition reaction with release of flammable vapors which



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			courses.	off from fire fighting to enter drains or water iners exposed to fire with water spray.
Spec ods	Specific extinguishing meth- ods		cumstances and t Use a water spray Collect contamina must not be disch Fire residues and	measures that are appropriate to local cir- the surrounding environment. / to cool fully closed containers. ted fire extinguishing water separately. This arged into drains. contaminated fire extinguishing water must accordance with local regulations.
			fire. Remove undamag so. Use water spray t	d water stream as it may scatter and spread ged containers from fire area if it is safe to do o cool unopened containers. down) gases/vapours/mists with a water
•	ial protective equipment efighters	:	Wear self-containe essary. Use personal prot	ed breathing apparatus for firefighting if nec- ective equipment.

## 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protec- tive equipment and emer- gency procedures	:	Follow safe handling advice and personal protective equip- ment recommendations. Use personal protective equipment. Avoid dust formation. Avoid breathing dust. Ensure adequate ventilation. Remove all sources of ignition. Never return spills in original containers for re-use. Treat recovered material as described in the section "Disposal considerations".
Environmental precautions	:	Prevent product from entering drains. Prevent further leakage or spillage if safe to do so. If the product contaminates rivers and lakes or drains inform respective authorities.
Methods and materials for containment and cleaning up	:	Contact with incompatible materials or exposure to tempera- tures exceeding SADT may result in a self-accelerating de- composition reaction with release of flammable vapors which may auto-ignite. Clear spills immediately. Suppress (knock down) gases/vapours/mists with a water spray jet. To clean the floor and all objects contaminated by this materi-

APS
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		Isolate waste Non-sparking Local or natio posal of this r employed in t	of water. inert absorbent material. and do not reuse. tools should be used. nal regulations may apply to releases and dis- naterial, as well as those materials and items he cleanup of releases. You will need to deter- gulations are applicable.
7. HANDL	ING AND STORAGE		
Technical measures			ng measures under EXPOSURE PERSONAL PROTECTION section.
	e on protection against nd explosion	Avoid dust for	om combustible material. mation. priate exhaust ventilation at places where dust
Advice on safe handling		Protect from of Protect from r Do not swallo Do not breath Avoid exposu Avoid contact Take precauti Never return a originally remo Provide suffic Avoid confine Keep away fro other ignition Smoking, eati plication area. Wash thoroug For personal Persons susc allergies, chro	w. e vapours/dust. re - obtain special instructions before use. with skin and eyes. onary measures against static discharges. any product to the container from which it was oved. ient air exchange and/or exhaust in work rooms. ment. om heat, hot surfaces, sparks, open flames and sources. No smoking. ng and drinking should be prohibited in the ap-
Conditions for safe storage		Keep in a dry Observe label Store in accor Avoid impuriti Electrical inst the technologi	ers tightly closed in a cool, well-ventilated place. place.



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			kept upright to pre	event leakage.
Materials to avoid		:	age. Keep away from o	act to get in contact with water during stor- combustible materials. strong acids, bases, heavy metal salts and bstances.
Recommended storage tem- perature		:	< 30 °C	
	er information on stor- tability	:	Stable under reco	mmended storage conditions.

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

### Components with workplace control parameters

Components	CAS-No.	Value type (Form of exposure)	Control parame- ters / Permissible concentration	Basis
Ammonium persulphate	7727-54-0	TWA	0.1 mg/m3 (Persulphate)	ACGIH

Other ingredients, which are listed in section 3 but not listed in this section, do not have established occupational exposure limit values.

**Engineering measures** : Minimize workplace exposure concentrations.

# Personal protective equipment. Among the following personal protective equipment, the PPEs which require safety certification need to be certified by KOSHA.

Respiratory protection	:	In the case of dust or aerosol formation use respirator with an approved filter.
Filter type	:	Filter type P
Eye protection	:	Ensure that eyewash stations and safety showers are close to the workstation location. Please follow all applicable local/national requirements when selecting protective measures for a specific workplace. Always wear eye protection when the potential for inadvertent eye contact with the product cannot be excluded. Tightly fitting safety goggles Please wear suitable protective goggles. Also wear face pro- tection if there is a splash hazard.
Hand protection Material	:	butyl-rubber



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	Break through time Glove thickness	: <= 480 : 0.47 mi		
	Material Break through time Glove thickness	: Nitrile r : <= 480 : 0.40 mi	min	
	Remarks	standar materia tive glov dependi ous sub plication cals of	d values! T I has to be ve. Choose ing on the ostance and ns, we reco the aforeme cturer. Wa	eak through time/strength of material are he exact break through time/strength of obtained from the producer of the protec- gloves to protect hands against chemicals concentration and quantity of the hazard- d specific to place of work. For special ap- mmend clarifying the resistance to chemi- entioned protective gloves with the glove sh hands before breaks and at the end of
Ski	n and body protection	resistar potentia Additior task be posable Wear a	nce data an al. nal body ga ing perform e suits) to a s appropria	protective clothing based on chemical d an assessment of the local exposure rments should be used based upon the ed (e.g., sleevelets, apron, gauntlets, dis- void exposed skin surfaces. e: ntistatic protective clothing.
Pro	tective measures	to the c		tive equipment must be selected according n and amount of the dangerous substance place.
Hyg	giene measures	Keep a When ເ When ເ	way from fo using do no using do no nands before	skin, eyes and clothing. ood and drink. t eat or drink. t smoke. e breaks and immediately after handling

## 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance : crystalline

Colour : white



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0	dour	:	odourless	
0	dour Threshold	:	not determined	
pl	Η	:	4 Concentration: ca	a. 10 g/l
Μ	lelting point/freezing point	:	Decomposition: I	Decomposes below the melting point.
	itial boiling point and boiling ange	g :	Not applicable	
FI	lash point	:	Not applicable	
E	vaporation rate	:	Not applicable	
F	lammability (solid, gas)	:	Not expected to f	orm explosive dust-air mixtures.
S	elf-ignition	:	The substance of	r mixture is not classified as pyrophoric.
	pper explosion limit / Upper ammability limit	· :	Upper explosion No data available	
	ower explosion limit / Lower ammability limit	· :	Lower explosion limit No data available	
V	apour pressure	:	: < 0.001 hPa (25 °C)	
В	ulk density	:	1,100 kg/m3 (20	°C)
S	olubility(ies) Water solubility	:	850 g/l soluble (2	25 °C)
R	elative vapour density	:	not determined	
R	elative density	:	not determined	
D	ensity	:	not determined	
	artition coefficient: n- ctanol/water	:	Not applicable	
A	uto-ignition temperature	:	Not applicable De	ecomposition
	elf-Accelerating decomposi on temperature (SADT)	- :		H.4 erating Decomposition Temperature. Lowest hich the tested package size will undergo a



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			self-accelerating	decomposition reaction.
Visco V	osity iscosity, dynamic	:	Not applicable	
Viscosity, kinematic		:	Not applicable	
Explo	Explosive properties		Not explosive	
Oxidizing properties		:	The substance o category 3.	r mixture is classified as oxidizing with the
Self-ł	Self-heating substances		The substance o	r mixture is not classified as self heating.
Partie	Particle size :		not determined	
Partie	cle Size Distribution	:		on: volume distribution chnique: laser diffraction

### **10. STABILITY AND REACTIVITY**

Chemical stability and possi- bility of hazardous reactions	:	<ul> <li>Stable under recommended storage conditions., May intensify fire; oxidizer.</li> <li>Stable under recommended storage conditions., No decomposition if stored normally.</li> <li>Avoid moisture.</li> <li>Even small amounts of moisture or impurities can noticably reduce the self-accelerating decomposition temperature (SADT).</li> </ul>
Conditions to avoid	:	Protect from contamination. Protect from moisture. Contact with incompatible substances can cause decomposi- tion at or below SADT. Even small amounts of moisture or impurities can noticably reduce the self-accelerating decomposition temperature (SADT).
Incompatible materials	:	Accelerators, strong acids and bases, heavy metals and heavy metal salts, reducing agents
Hazardous decomposition products	:	Irritant, caustic, flammable, noxious/toxic gases and vapours can develop in the case of fire and decomposition



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11. TOX	ICOLOGICAL INFORM	ATION				
	Information on likely routes of : No data available exposure					
Hea	Health hazard information					
Aci	Acute toxicity					
Hai	Harmful if swallowed.					
Pro	oduct:					

Acute oral toxicity	:	LD50 (Rat, male): 742 mg/kg
		Method: OECD Test Guideline 401

Components:

Ammonium persulphate:	
Acute oral toxicity :	LD50 (Rat, male): 742 mg/kg Method: OECD Test Guideline 401 Assessment: The component/mixture is moderately toxic after single ingestion. Remarks: Based on test data
Acute inhalation toxicity :	LC50 (Rat): > 5.1 mg/l Exposure time: 4 h Test atmosphere: dust/mist Method: OECD Test Guideline 403 Assessment: The substance or mixture has no acute inhala- tion toxicity Remarks: Expert judgement
Acute dermal toxicity :	LD50 (Rat): > 2,000 mg/kg Assessment: The substance or mixture has no acute dermal toxicity Remarks: Expert judgement
Skin corrosion/irritation	

Causes skin irritation.

Product:		
Species	:	Rabbit
Method	:	OECD Test Guideline 404
Result	:	Skin irritation
Remarks	:	May cause skin irritation in susceptible persons.



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### Components:

### Ammonium persulphate:

Species	:	Rabbit
Method	:	OECD Test Guideline 404
Result	:	Skin irritation

### Serious eye damage/eye irritation

Causes serious eye irritation.

#### Product:

Species	: Rabbit
Result	: Irritating to eyes.
Method	: OECD Test Guideline 405
Remarks	: May cause irreversible eye damage.

#### Remarks

#### Components:

#### Ammonium persulphate:

Species	:	Rabbit
Result	:	Irritating to eyes.
Method	:	OECD Test Guideline 405

### Respiratory or skin sensitisation

#### Respiratory sensitisation

May cause allergy or asthma symptoms or breathing difficulties if inhaled.

#### Skin sensitisation

May cause an allergic skin reaction.

#### Product:

Exposure routes Species Method Result	:	Skin contact Guinea pig OECD Test Guideline 406 May cause sensitisation by skin contact.
Exposure routes Result	:	inhalation (dust/mist/fume) May cause sensitisation by inhalation.
Remarks	:	Causes sensitisation.

### Components:

### Ammonium persulphate:

Exposure routes	:	Skin contact
Species	:	Guinea pig
Method	:	OECD Test Guideline 406
Result	:	May cause sensitisation by skin contact.



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Expo Resu	sure routes It	: inhalation (d : May cause s	ust/mist/fume) ensitisation by inhalation.
	i <b>nogenicity</b> ata available		
<u>Com</u>	ponents:		
	onium persulphate: ata available		
	cation Route sure time od	: Mouse : Skin contact : 52 weeks : OECD Test : negative	Guideline 451
	n <b>cell mutagenicity</b> ata available		
<u>Com</u>	ponents:		
	onium persulphate: ata available		
Geno	toxicity in vitro	: Test Type: E Result: nega	Bacterial reverse mutation assay (AMES) tive
Geno	toxicity in vivo		Route: Intraperitoneal CD Test Guideline 474
-	oductive toxicity ata available		
<u>Com</u>	ponents:		
	onium persulphate: ata available		
Effect	ts on fertility	General Tox General Tox	t Route: Ingestion icity - Parent: NOAEL: >= 250 mg/kg body weight icity F1: NOAEL: >= 250 mg/kg body weight CD Test Guideline 421

## STOT - single exposure

May cause respiratory irritation.



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<b>Prod</b> Asse	uct: ssment	: May cause respir	atory irritation.
<u>Com</u>	ponents:		
	<b>onium persulphate:</b> ssment	: May cause respir	atory irritation.
	<b>F - repeated exposure</b> pplicable		
<u>Com</u>	ponents:		
	onium persulphate: ssment		r mixture is not classified as specific target epeated exposure.
Repe	ated dose toxicity		
<u>Com</u>	ponents:		
Amm	onium persulphate:		
	EL EL cation Route sure time	: Rat : 1,000 mg/kg : 3,000 mg/kg : Ingestion : 90 d : OECD Test Guid	eline 408
	EL cation Route sure time	: Rat : 41.1 mg/kg : oral (feed) : 28 d : OECD Test Guid	eline 407
Spec NOAI Applie Methe	EL cation Route	: Rat : 0.0103 mg/l : inhalation (dust/n : OECD Test Guid	
Spec	ies	: Rat	
Applie Methe	cation Route od	: 0.005 mg/l : inhalation (dust/n : OECD Test Guid	
-	ration toxicity ata available		
Expe	rience with human ex	posure	

No data available



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	<b>cology, Metabolism, D</b> ata available	istrik	oution	
	ological effects ata available			
Furth	er information			
<u>Produ</u> Rema	rks	:	No data available	
. ECOLO	DGICAL INFORMATIO	N		
Ecoto	oxicity			
<u>Comp</u>	<u>oonents:</u>			
Amm	onium persulphate:			
Toxici	ity to fish	:	LC50 (Scophthaln Exposure time: 96 Method: OECD Te	
	ity to daphnia and other ic invertebrates	r :	EC50 (Daphnia m Exposure time: 48 Method: OECD Te	
Toxici plants	ity to algae/aquatic	:	EC50 (Phaeodact Exposure time: 72 Method: OECD Te	2 h
			NOEC (Phaeodac Exposure time: 72 Method: OECD Te	2 h
Toxici	ty to microorganisms	:	EC10 (Pseudomo Exposure time: 18	nas putida): 36 mg/l 3 h
Persi	stence and degradab	ility		
<u>Comp</u>	oonents:			
	<b>onium persulphate:</b> gradability	:		thods for determining biodegradability are norganic substances.
Bioad	ccumulative potential			
<u>Comp</u>	oonents:			
۸mm	onium persulphate:			

## SAFETY DATA SHEET

## APS



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	ition coefficient: n- anol/water	:	Remarks: Not ap	blicable
	b <b>ility in soil</b> data available			
Oth	er adverse effects			
	<b>duct:</b> itional ecological infor- ion	:	No data available	
	OSAL CONSIDERATIO	NS		
•	ste from residues	:	The product shou courses or the so	te ponds, waterways or ditches with chemi-
Con	taminated packaging	:	Clean container v Dispose of conter plant. Empty remaining Dispose of as un Do not re-use em	nts/ container to an approved waste disposal contents. used product.

### **Disposal precautions**

Dispose of contents and container according to wastes control act.

## 14. TRANSPORT INFORMATION

## International Regulations

UNRTDG		
UN number	:	UN 1444
Proper shipping name	:	AMMONIUM PERSULPHATE
Class	:	5.1
Packing group	:	III
Labels	:	5.1
Environmentally hazardous	:	no
IATA-DGR		
UN/ID No.	:	UN 1444
Proper shipping name	:	Ammonium persulphate
Class	:	5.1



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Packing group Labels Packing instruction (cargo aircraft) Packing instruction (passen- ger aircraft)	::	III Oxidizer 563 559
IMDG-Code UN number Proper shipping name	:	UN 1444 AMMONIUM PERSULPHATE
Class Packing group Labels EmS Code Marine pollutant	: : :	5.1 III 5.1 F-A, S-Q no

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

Not applicable for product as supplied.

#### **National Regulations**

Refer to section 15 for specific national regulation.

#### Special precautions for user

The transport classification(s) provided herein are for informational purposes only, and solely based upon the properties of the unpackaged material as it is described within this Safety Data Sheet. Transportation classifications may vary by mode of transportation, package sizes, and variations in regional or country regulations.

### 15. REGULATORY INFORMATION

#### National regulatory information

#### **Regulation under the Occupational Safety and Health Act**

Harmful Substances Prohibited from Manufacturing Not applicable

#### Harmful Substances Required Permission for Manufacture

Not applicable Harmful Agents to be kept below Occupational Exposure Limits Not applicable

## Harmful Agents Required to be kept below Permission Levels

Not applicable

#### Hazardous substances requiring management

Not applicable

### Special Management Materials

Not applicable



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### **Controlled Substances Subject to Environment Monitoring**

Not applicable

Controlled Substances Subject to Health Examination Not applicable

Hazardous Substances Subject to Process Safety Management (PSM) Reporting Obligation

- Not applicable

#### **Regulation under the Chemicals Control Act**

- **Toxic Chemicals**
- Not applicable
- **Restricted Chemicals**

Not applicable

#### **Prohibited Chemicals**

Not applicable

## Toxic Release Inventory

Not applicable

## Accident Precaution Chemicals

Not applicable

#### Dangerous Substances Safety Management Act



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Class	ification	:	Group 1, Oxidizin	g solids, Peroxodisulphates	
Hazard rank		:	Hazardous rank II		
Designated Quantity		:	300 kilogram		
Safety Warning		:	Be careful in cont shock	act with flammables, Be careful with fire and	

## Wastes Control Act

Industrial general wastes Follow article 13 of the act to dispose the product waste

### Other requirements in domestic and other countries

The components of this pro TCSI (TW)	duo :	<b>et are reported in the following inventories:</b> On the inventory, or in compliance with the inventory
TSCA (US)	:	All substances listed as active on the TSCA inventory
AIIC (AU)	:	All components are listed on the inventory, regulatory obliga- tions/restrictions apply
DSL (CA)	:	All components of this product are on the Canadian DSL
ENCS (JP)	:	On the inventory, or in compliance with the inventory
ISHL (JP)	:	On the inventory, or in compliance with the inventory
KECI (KR)	:	On the inventory, or in compliance with the inventory
PICCS (PH)	:	On the inventory, or in compliance with the inventory
IECSC (CN)	:	On the inventory, or in compliance with the inventory
NZIOC (NZ)	:	On the inventory, or in compliance with the inventory
TECI (TH)	:	On the inventory, or in compliance with the inventory



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### 16. OTHER INFORMATION

#### Further information

Sources of key data used to compile the Safety Data Sheet	:	Internal technical data, data from raw material SDSs, OECD eChem Portal search results and European Chemicals Agency, http://echa.europa.eu/
Issuing date	:	2017/03/08
<b>Revision number and date</b> Number of Revision	:	2.3
Revision Date	:	2024/03/13
Other information	:	This safety datasheet only contains information relating to safety and does not replace any product information or prod- uct specification. These safety instructions also apply to empty packaging which may still contain product residues. The hazards on the label also apply to residues in the con- tainer.
Date format	:	yyyy/mm/dd

#### Full text of other abbreviations

ACGIH	:	USA. ACGIH Threshold Limit Values (TLV)
ACGIH / TWA	:	8-hour, time-weighted average

AIIC - Australian Inventory of Industrial Chemicals; ANTT - National Agency for Transport by Land of Brazil; ASTM - American Society for the Testing of Materials; bw - Body weight; CMR -Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DSL - Domestic Substances List (Canada); ECx - Concentration associated with x% response; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; ERG - Emergency Response Guide; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; n.o.s. - Not Otherwise Specified; Nch - Chilean Norm; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NOM - Official Mexican Norm; NTP - National Toxicology Program; NZIoC - New

## SAFETY DATA SHEET



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Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; SADT - Self-Accelerating Decomposition Temperature; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TDG - Transportation of Dangerous Goods; TECI - Thailand Existing Chemicals Inventory; TSCA - Toxic Substances Control Act (United States); UN - United Nations; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative; WHMIS - Workplace Hazardous Materials Information System

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

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