



	1120/2014
1 Identification	
Product identifier	
Product name: <u>Titanium(IV) oxide</u>	
Stock number: 10897	
CAS Number: 13463-67-7	
<b>EC number:</b> 236-675-5	
Relevant identified uses of the substance or mixture and uses advised against.	
Identified use: SU24 Scientific research and development	
Details of the supplier of the safety data sheet Manufacturer/Supplier:	
Alfa Aesar	
Thermo Fisher Scientific Chemicals, Inc. 30 Bond Street	
Ward Hill. MA 01835-8099	
Tel: 800-343-0660 Fax: 800-322-4757	
Email: tech@alfa.com www.alfa.com	
Information Department: Health, Safety and Environmental Department	
Emergency telephone number: During normal business hours (Monday-Friday, 8am-7pm EST), call (800) 343-0660. After normal business hours, call Carechem 24 at (866) 928-0789.	
2 Hazard(s) identification	
Classification of the substance or mixture in accordance with 29 CFR 1910 (OSHA HCS)	
GHS08 Health hazard	
Care 2, H351, Suspected of causing cancer	
Carc. 2 H351 Suspected of causing cancer. Hazards not otherwise classified No information known.	
GHS label elements The product is classified and labeled in accordance with 29 CFR 1910 (OSHA HCS) Hazard pictograms	
GHS08	
Signal word Warning	
Hazard statements	
H351 Suspected of causing cancer. Precautionary statements	
Precautionary statements P281 Use personal protective equipment as required.	
P201 Obtain special instructions before use.	
P202 Do not handle until all safety precautions have been read and understood. P308+P313 IF exposed or concerned: Get medical advice/attention. P405 Store locked up.	
P501 Dispose of contents/container in accordance with local/regional/national/international regulations.	
WHMIS classification D2A - Very toxic material causing other toxic effects	
(T)	
Classification system HMIS ratings (scale 0-4)	
(Hazardouš Materials Identification System)	
HEALTH I Health (acute effects) = 1 FIRE D Flammability = 0	
REACTIVITY Physical Hazard = 1	
Other hazards	
Results of PBT and vPvB assessment PBT: Not applicable.	
vPvB: Not applicable.	
3 Composition/information on ingredients	
Chemical characterization: Substances	
CAS# Description:	
13463-67-7 Titanium(IV) oxide Identification number(s): EC number: 236-675-5	
<b>EC number:</b> 236-675-5 ´	
4 First-aid measures	
Description of first aid measures	
After inhalation	
Supply fresh air. If required, provide artificial respiration. Keep patient warm. Seek immediate medical advice.	
After skin contact Immediately wash with water and soan and rinse thoroughly	
Immediately wash with water and soap and rinse thoroughly. Seek immediate medical advice.	
After eye contact Rinse opened eye for several minutes under running water. Then consult a doctor. After swallowing Seek medical treatment.	
(Contd.	on page 2) USA

-	Revi	ewed on 07/25/2014
Product name: <b>Titanium(IV) oxide</b>		
		(Contd. of page 1)
Information for doctor Most important symptoms and effect	s, both acute and delayed No further relevant information available.	, , , , , , , , , , , , , , , , , , , ,
Indication of any immediate medical	attention and special freatment needed No further relevant information available.	
5 Fire-fighting measures		
Extinguishing media	t is not flammable. Use fire-fighting measures that suit the surrounding fire	
Special hazards arising from the sub	t is not flammable. Use fire-fighting measures that suit the surrounding fire. stance or mixture	
If this product is involved in a fire, the fo Titanium oxides	Nowing can be released:	
Advice for firefighters Protective equipment:		
Wear self-contained respirator. Wear fully protective impervious suit.		
6 Accidental release measures	inmant and amarganay procedures	
Personal precautions, protective equipment. Keep unpro	phene and emergency procedures	
Ensure adequate ventilation Environmental precautions: Do not al	low product to reach sewage system or any water course.	
Methods and material for containmer Prevention of secondary hazards: No	<b>It and cleaning up:</b> Dispose of contaminated material as waste according to section 13.	
Reference to other sections		
See Section 7 for information on safe has See Section 8 for information on person	nal protection equipment.	
See Section 13 for disposal information.		
7 Handling and storage		
Handling Precautions for safe handling		
Keep container tightly sealed.	containere	
Store in cool, dry place in tightly closed Ensure good ventilation at the workplac	e	
	explosions and fires: The product is not flammable	
Conditions for safe storage, including Storage		
Requirements to be met by storeroor Information about storage in one con	ns and receptacles: No special requirements. nmon storage facility: Store away from oxidizing agents	
Further information about storage co	nmon storage facility: Store away from oxidizing agents. nditions:	
Keep container tightly sealed. Store in cool, dry conditions in well seal	led containers.	
Specific end use(s) No further relevant	t information available.	
8 Exposure controls/personal prot		
Additional information about design	of technical systems: designed for bazardous chemicals and baying an average face velocity of at least 100 feet per minute	
Control parameters	designed for hazardous chemicals and having an average face velocity of at least 100 feet per minute.	
Components with limit values that re-		
13463-67-7 Titanium(IV) oxide (100.09 PEL (USA) Long-term value: 15* mg/		
` í total dust		
REL (USA) See Pocket Guide App. A		
TLV (USA) Long-term value: (10) NIC *respirable fraction, NIC-	43	
EL (Canada) Long-term value: 10 mg/r IARC 2B	$n^3$	
EV (Canada) Long-term value: 10 mg/r	$n^3$	
total dust Additional information: No data		
Exposure controls		
Personal protective equipment		
The usual precautionary measures for h	andling chemicals should be followed.	
Remove all soiled and contaminated clo	and reed. thing immediately.	
Wash hands before breaks and at the e Maintain an ergonomically appropriate y	andling chemicals should be followed. and feed. thing immediately. nd of work. working environment. spirator when high concentrations are present.	
Breathing equipment: Use suitable res Protection of hands:	spirator when high concentrations are present.	
Impervious aloves		
Check protective gloves prior to each us The selection of suitable gloves not only	se for their proper condition. / depends on the material, but also on quality. Quality will vary from manufacturer to manufacturer.   <b>minutes)</b> Not determined	
Penetration time of glove material (in Eye protection: Safety glasses	minutes) Not determined	
Body protection: Protective work cloth	ing.	
9 Physical and chemical properties	5 5	
Information on basic physical and ch		
General Information Appearance:		
Form: Color:	Various forms (powder/flake/crystalline/beads, etc.) White	
Odor:	Odorless	
Odor threshold: pH-value:	Not determined.	
μπ-ναίας.	Not applicable.	(Contd. on page 3)
		USA

## Product name: Titanium(IV) oxide

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Charge in condition         Fig. 2000 (2	Product name: Titanium(IV) oxide	(Contd. of page		
Building pointBoiling range:         200-3000 °C (452-4624 °F)           Perminability (olif) gase-out         Mot determined           Auto (gitting)         Mot determined           Perminability (olif) gase-out         Mot determined           Denger of explosion:         Mot determined           Upper:         Mot determined           Ottermined	Change in condition			
Sublitivity of sense of the sense	Melting point/Melting range: Boiling point/Boiling range:	1830-1850 °C (3326-3362 °F) 2500-3000 °C (4532-5432 °F)		
protein semperature: Wet determined	Sublimation temperature / start:	Not determined		
Accomposition         Met determined           Darger of september         Met determined           Exploration         Met determined           Exploration         Met determined           Exploration         Met determined           Value pressare         Met	Ignition temperature:	Not determined		
Explosion limits: Not determined Variable Schemen Variable Variabl	Decomposition temperature:			
Lower: Met determined Webor pressure: Met applicable Besish et 30 °C (68 °F): 4.3 6 fyrm? (35 56 listigal) Webor ensure: Met applicable Besish et 30 °C (68 °F): 4.3 6 fyrm? (35 56 listigal) Webor ensure: Met applicable Besish et 30 °C (68 °F): 4.3 6 fyrm? (35 56 listigal) Webor ensure: Met applicable Besish et 30 °C (68 °F): 4.3 6 fyrm? (35 56 listigal) Webor ensure: Met applicable Webor ensure: Met applicable Met applicable	Danger of explosion:	Not determined.		
Wadr pressure Relative divisity         Not applicable in applicable war density         Not applicable in applicable war density           Relative divisity         Not applicable in applicable war density         Not applicable war density         Not applicable war density           Visco density         Not applicable war density         Not applicable war density         Not applicable war density           Visco density         Not applicable war density         Not applicable war density         Not applicable war density           Visco density         Not applicable war density         Not applicable war density         Not applicable war density           10 Stability and reactivity         Not applicable war density         Not applicable war density         Not applicable war density           11 Toxicological information information on toxicological effect information on toxicological effect information on corcologicity affects         Not applicable war density         Not applicable war density           12 Stability of Toxicological information information on corcologicity affects         Not applicable war density         Not applicable war density         Not applicable war density           13 Toxicological information information on corcologicity affects         Not applicable war density         Not applicable war density         Not applicable war density           14 Toxicological information information on corcologicity is density of toxic Effects         Not applicable war density         Not app	Lower:			
Density at 20 °C (08 °F): d. 20 gcm (05.0 https://dxia. Wappordensity //dxia. Wappordensity //dxia. Committee //dxia.	Upper: Vapor pressure:			
Vacous density         Most applicable.           Subplicition, Mischallity with Water         This soluble This soluble Partition coefficient (noclass/weter): Not deprine the Most applicable.           Other Information         Not applicable.           Composition Information         Not applicable.           Common Status (Status) (Status) (Information Information available.         Not applicable.           Common Status (Status) (Status) (Information Information Information Information Information Information Information         Not applicable.           If Toxicological Information         Information Information Information Information Information Information         Notable Status (Status) (Information Information Information Information Information Information Information Information Information Information Information Information Information         Notable Status (Status) (Information Information Informatin Informatin Information Information Informatin Information Info	Density at 20 °C (68 °F):	4.26 g/cm³ (35.55 lbs/gal)		
Selbability in / Miscially with probabile         Institution           Partition contraction (n-occanol/wash): Not diverse mixed.         Not applicable           Other information         Not purpose           Packativity to information known.         Reactivity its or information known.           Charling a stability Salability subservation models storage conditions.         Peakativity its or information known.           Charling a stability Salability S	Vapor density	Not applicable.		
Water: Partition of the construction (noceanolywater): Mol applicable. More matic: Mol Mol Mol Mol Mol Mol Mol Mol Mol Mol	Evaporation rate Solubility in / Miscibility with	Not applicable.		
Wiscosity: tymanic: Contention         Not applicable No further relevant information available.           05 tability and reactivity Reactivity in No information known. Chemical stability Stable under recommended storage conditors. Thermal decomposition 1 conditions to be avoided. Decomposition will not occur if used and stored according to specifications. Thermal decomposition 1 conditions to be avoided. Decomposition will not occur if used and stored according to specifications. Conditions to avoid No further relevant information available.           1 Toxicological Information recompatible metricals: Conditions to be avoided. Decomposition (conditions) recompatible metricals: Conditions to the substances and the metrical stability of the relevant for classification: No data the toxicity. The Registry of Toxic Effects of Chemical Substances (RTECS) contains acute toxicity data for this substance. LDI CSO values that are relevant for classification: No data the internation on correction: May classe initiation Sensitization: No sensitizing effects incompatibility of conditions and the other of classification in the absence of afficient evidence in programmatic and will not accur in the absence of afficient evidence in programmatic and will not accur in the absence of a certosponding in fundaments. How Conditions to avoid No conditions and the other ender on wind in a classification evidence in programmatic and will not accur in the absence of a certosponding in the substance. The Registry of Toxic Effects of Chemical Substances (RTECS) contains mutation data for this substance. The Registry of Toxic Effects of Chemical Substances (RTECS) contains mutation data for this substance. The Registry of Toxic Effects of Chemical Substances (RTECS) contains mutation data for this substance. The Registry of Toxic Effects of Chemical Substances (RTECS) contains mutation data for this substance. The Registry of Toxic Effects of Chemical Su	Water:			
Memeratic:         Not splicable.           Obtain Information         Not splicable.           IO Stability and reactivity         No information know.           Control Stability Stabile under the manual delarge conditions.         Splicable.           Control Stability Stabile under the manual delarge conditions.         Splicable.           Conditions to avoid No higher relevant information available.         Splicable.           Information in oxical objects for provide setting agents         Splicable.           Information in oxical objects for the substances (RTECS) contains acute toxicity data for this substance.         Splicable.           DUI Stability of heardown for classification: No data         Splicable.         Splicable.           Information on oxical objects for own.         Splicable.         Splicable.         Splicable.           Information on oxical objects for own.         Splicable.         Splicable.         Splicable.           Splicable.         Toxic Edects of Chemical Substances (RTECS) contains acute toxicity data for this substance.         Splicable.           Splicable.         Toxic Edects for own.         Splicable.         Splicable.           Splicable.         Toxic Edects of Chemical Substances (RTECS) contains multiple dots reactive and/or mechable data for this substance.           Splicable data for this substance.         Conditis substance.         Splicable. <th>Viscosity:</th> <td></td>	Viscosity:			
Other Information         No further relevant information available.           10 Stability and reactivity         Reactivity No. information forown.           Chamical stability Stability and reactions reactions reactions recommended storage conditions.         Pressibility of heardous reactions reacts with storag colding agents.           Conditions to avoid No. Information available.         Pressibility of heardous reactions reacts with storag colding agents.           Conditions to avoid No. Information         Pressibility of the relevant information available.           Hazardous decomposition products: Trainium oxides         Pressibility of the Registry of Toxic Effects of Chemical Substances (RTECS) contains acute toxicity data for this substance.           Statistication: No. series of effects         Conditions to avoid No data Stratege strateg		Not applicable. Not applicable.		
Reactivity No information income.         Chemical statistics income recommended storage conditions.           Thermal decomposition / conditions to be avoided: Decomposition will not occur if used and stored according to specifications.           Thermal decomposition / conditions to be avoided: Decomposition will not occur if used and stored according to specifications.           Presentation / conditions in the intervent information available.           Information on toxicological effects           Information on toxicological effects           Set in transformation on correston: May cause initiation           System initiation or correston: May cause initiation           System initiation or correston: May cause initiation           Set initiation or correston: May cause initiation		No further relevant information available.		
Reactivity No information         Income.           Chemical statify Stable under recommended storage conditions.         Thermal decomposition / conditions to be evolded: Decomposition will not occur if used and stored according to specifications.           Premain decomposition / conditions to be evolded: Decomposition will not occur if used and stored according to specifications.           Premain decomposition products: Thanium oxides           11 Toxicological information           Information on toxicological effects           Shin initiation or corrosion: May cause irritation           Eye instation or corrosion: May cause irritation           Eye infration or corrosion: May cause irritation           Carcinogenical information           Garcinogenical information           Carcinogenical information           Carcinogenical information           Carcinogenical information           Carcinogenical information           Carcinogenical information           Carcinogenical information           The Registry of Toxic Effects of Chemical Substances (RTECS) contains mutation data for this substance.           Carcinogenical information           The Registry of Toxic Effects of Chemical Substances (RTECS) contains mutation data for this substance.           ACOH A Figure organ system toxicity - repeated exposure: No affects known.           Specific target organ system toxicity - repeated exposure: No affects known.	10 Stability and reactivity			
Possibility of hazardous reactions Reacts with strong oxidizing agents Conditions to avoid Mix information Hazardous decomposition products: Titanium oxides 11 Toxicological information Information on toxicological effects Acute toxicity: The Registry of Toxic Effects of Chemical Substances (RTECS) contains acute toxicity data for this substance. LDLCQU subsets that are relevant for classification: No data Event texticity: The Registry of Toxic Effects of Chemical Substances (RTECS) contains mutation data for this substance. LDLCQU subsets that are relevant for classification: No data Event texticity: The Registry of Toxic Effects of Chemical Substances (RTECS) contains mutation data for this substance. Correctly and releases that are relevant for classification: No data Event textification or corrosion: Way cause imitation Sensitization: No sensitization genetics known. ACGIH 4A: No classification are primated substances (RTECS) contains turnorgenic add/or acroinogenic to humans: limited evidence in humans in the absence of sufficient evidence in experimental animals. The Registry of Toxic Effects of Chemical Substances (RTECS) contains turnorgenic add/or acroinogenic to humans and/or animals. The Registry of Toxic Effects of Chemical Substances (RTECS) contains turnorgenic add/or acroinogenic to humans in the absence of sufficient evidence in experimental animals. The Registry of Toxic Effects of Chemical Substances (RTECS) contains multiple data for this substance. Specific target organ system toxicity: - regented exposure: No effects known. Specific target organ system toxicity: - regented exposure: No effects known. Specific target organ system toxicity: - regented exposure: No effects known. Specific target organ system toxicity: - regented information available. Prostoring Additional exclosogical information: available. Prostored and degraduality No turber relevant information available. Mobility in soil No further relevant information available. Mobility in soil No further relevan	Reactivity No information known.			
Possibility of hazardous reactions Reacts with strong oxidizing agents Conditions to avoid Mix information Hazardous decomposition products: Titanium oxides 11 Toxicological information Information on toxicological effects Acute toxicity: The Registry of Toxic Effects of Chemical Substances (RTECS) contains acute toxicity data for this substance. LDLCQU subsets that are relevant for classification: No data Event texticity: The Registry of Toxic Effects of Chemical Substances (RTECS) contains mutation data for this substance. LDLCQU subsets that are relevant for classification: No data Event texticity: The Registry of Toxic Effects of Chemical Substances (RTECS) contains mutation data for this substance. Correctly and releases that are relevant for classification: No data Event textification or corrosion: Way cause imitation Sensitization: No sensitization genetics known. ACGIH 4A: No classification are primated substances (RTECS) contains turnorgenic add/or acroinogenic to humans: limited evidence in humans in the absence of sufficient evidence in experimental animals. The Registry of Toxic Effects of Chemical Substances (RTECS) contains turnorgenic add/or acroinogenic to humans and/or animals. The Registry of Toxic Effects of Chemical Substances (RTECS) contains turnorgenic add/or acroinogenic to humans in the absence of sufficient evidence in experimental animals. The Registry of Toxic Effects of Chemical Substances (RTECS) contains multiple data for this substance. Specific target organ system toxicity: - regented exposure: No effects known. Specific target organ system toxicity: - regented exposure: No effects known. Specific target organ system toxicity: - regented exposure: No effects known. Specific target organ system toxicity: - regented information available. Prostoring Additional exclosogical information: available. Prostored and degraduality No turber relevant information available. Mobility in soil No further relevant information available. Mobility in soil No further relevan	Chemical stability Stable under recomm Thermal decomposition / conditions to	nended storage conditions. o be avoided: Decomposition will not occur if used and stored according to specifications.		
Incompatible materials: Oxidizing agents           Hazardous decomposition products: Titanium oxides           11 Toxicological information           Information on toxicological effects           Actuate toxicity: The Registry of Toxic Effects of Chemical Substances (RTECS) contains acute toxicity data for this substance.           List in interation or corrorsion: May cause initiation           Sensitization: No sensitizing effects known.           Gerr cell mutategenicity: The Registry of Toxic Effects of Chemical Substances (RTECS) contains mutation data for this substance.           JARC-28: Possible variancegneit to humans: limited evidence in humans in the absence of sufficient evidence in experimental animals.           ACGIH A4: Not classification: No sensitizing earcer.           ACGIE Voi Toxic Effects of Chemical Substances (RTECS) contains mutation data for this substance.           Specific target organ system toxicity: - repeated exposure: No effects known.           Specific target organ system toxicity: - repeated exposure: No effects known.           Subscure to chronic toxicity: The Registry of Toxic Effects of Chemical Substances (RTECS) contains multiple dose toxicity data for this substance.           Additional toxicoogical information           Specific target organ system toxicity: - ropeated exposure: No effects known.           Subscure to chronic toxicity: The Registry of Toxic Effects of Chemical Substances (RTECS) contains multiple dose toxicity data for this substance.           Additional toxicoogical information     <	Possibility of hazardous reactions Rea	acts with strong oxidizing agents		
11 Toxicological information         Information on toxicological effects         Acute toxicity: The Registry of Toxic Effects of Chemical Substances (RTECS) contains acute toxicity data for this substance.         LDI.CSD values that are relevant for classification: No data         Skin initiation or corroshorm. Way cause initiation         Germ cell mutagenicity: The Registry of Toxic Effects of Chemical Substances (RTECS) contains mutation data for this substance.         Garciell mutagenicity: The Registry of Toxic Effects of Chemical Substances (RTECS) contains mutation data for this substance.         Carcinogenicity:         MCC: EFFEXIBIL Carcinogenicity:         Subscrite toxicity:       Not effects known.         Subscrite toxicity:       Not effects known. <th>Incompatible materials: Oxidizing ager</th> <td>nts</td>	Incompatible materials: Oxidizing ager	nts		
Information       on toxicological effects         Acute toxicity: The Registry of Toxic Effects of Chemical Substances (RTECS) contains acute toxicity data for this substance.         LDUCS0 values that are relevant for classification: No data         Skin intribution or corrosion: May cause inflation         Eye Inflation or corrosion: May cause inflation         Germ cell musi sanalization:         Germ cell musi sanalization:         ACS JA AR.         Disposition or corrosion:         ACS Status         ACS Status         Carcinogenicity:         Suspected to classing cancer.         IARC 2B Possibly dracinogenic to humans: limited evidence in humans in the absence of sufficient evidence in experimental animals.         ACS IM AR. Not classification:         Specific target organ system toxicity - repeated exposure: No effects known.         Specific target organ system toxicity - single exposure: No effects known.         Action toxicological information:         Toricity:         Additional toxicological information evailable.         Persistence and degradability No further relevant information available.         Bioaccumulative potential No further relevant information available.         Bosocumulative potential No further relevant information available.         Bosocumulative potential No further relevant information available.         Additional eco	Hazardous decomposition products:	litanium oxides		
Acute toxicity: The Registry of Toxic Effects of Chemical Substances (RTECS) contains acute toxicity data for this substance.         LDNCSO values that are relevant for classification: No data         Skin Initiation or corrosion: May cause inflation         Bee inflation or corrosion: May cause inflation         Germ cell mutagenicity: The Registry of Toxic Effects of Chemical Substances (RTECS) contains mutation data for this substance.         Carcinogenicity:         Support of Causing cancer.         ARC: 3P. Possibly carcinogenic to humans: limited evidence in humans in the absence of sufficient evidence in experimental animals.         ARC: 3P. Possibly carcinogenic to humans: limited evidence in the absence of sufficient evidence in experimental animals.         ARC: 3P. Possible carcinogenic to humans: limited evidence in humans in the absence of sufficient evidence in experimental animals.         ARC: 3P. Possible carcinogenic to humans: limited evidence in humans in the absence of sufficient evidence in experimental animals.         ARC: 3P. Possible carcinogenic to humans: limited evidence in humans in the absence of sufficient evidence in experimental animals.         ARC: 3P. Possible carcinogenic to human carcinogen: hadrogue absences in the absence of sufficient evidence in experimental animals.         ARC: 3P. Possible carcinogenic to human carcinogen: No effects known.         Specific target organ system toxicity - repeated exposure: No effects known.         Subacute to chronic toxicity in the absence of our knowledge the acute and chronic toxicity of this substance is not fu	0			
LDLC50 values that are relevant for classification: No data         Skin Initiation or consist: May cause initiation         Series initiation       Series initiation         Series initiation       No rouse initiation         Suspected O causing cancer.       Notice Effects of Chemical Substances in humans in the absence of sufficient evidence in experimental enimals.         IARC/218       Possibly carrinogenicity:       Toxice Effects of Chemical Substances.         Specific target organ system toxicity - repeated exposure: No effects known.       Specific target organ system toxicity - repeated exposure: No effects known.         Specific target organ system toxicity - single exposure: No effects known.       Specific target organ system toxicity - repeated exposure: No effects known.         Specific target organ system toxicity - single exposure: No effects known.       Specific target organ system toxicity - repeated exposure: No effects known.         Specific target organ system toxicity - repeated exposure: No effects known.       Specific target organ system toxicity - repeated exposure: No effects known.         Specific target organ system toxicity - single exposure: No effects known.       Specific target organ system toxicity - repeated exposure: No worked to this substance is not fully known.         12       Ecological information	Information on toxicological effects Acute toxicity: The Registry of Toxic Ef	fects of Chemical Substances (RTECS) contains acute toxicity data for this substance		
Eye irritation or corrosion: May cause irritation           Sensitization: No sensitization: No sensitization of the sensore of the senso	LD/LC50 values that are relevant for c	lassification: No data		
Sensitization: No sensitizing effects known. Germ cell mutagenicity: The Registry of Toxic Effects of Chemical Substances (RTECS) contains mutation data for this substance. Carcinogenicity: ARRENE Cell A4: Not classifiable as a human carcinogen. Inadequate data on which to classify the agent in terms of its carcinogenicity in humans and/or animals. The Registry of Toxic Effects of Chemical Substances (RTECS) contains tumorigenic and/or neoplastic data for this substance. Reproductive toxicity: No effects known. Specific target organ system toxicity - repeated exposure: No effects known. Specific target organ system toxicity - repeated exposure: No effects known. Specific target organ system toxicity - repeated exposure: No effects known. Substance in toxicoty and toxicity - repeated exposure: No effects known. Specific target organ system toxicity - repeated exposure: No effects known. Substance toxicoty of this substance. Additional toxicological information: Toxic Effects of Chemical Substances (RTECS) contains multiple dose toxicity data for this substance. Additional toxicological information: Toxic Effects of Chemical Substances (RTECS) contains multiple dose toxicity data for this substance. Additional ecological information: Toxicity Aquatic toxicity: No further relevant information available. Persistence and degradability No further relevant information available. Mobility in soli No further relevant information available. Mobility in the applicable. Other adverse effects No further relevant information available. Mot applicable. Mot applicable Dort, ADN, MDDG, IATA Not applicable Mot applicable Packing group Dort, MDM, MDG, IATA Not applicable Packing group Dort, MDM, MDG, IA				
Carcinogenicity:       Very Carcinogenic to human carcinogen: Inadequate data on which to classify the agent in terms of its carcinogenic to human carcinogen: Inadequate data on which to classify the agent in terms of its carcinogenicity in humans and/or animals. The productive toxicity: No classifies as human carcinogen: Inadequate data on which to classify the agent in terms of its carcinogenic law of the substance. Report of the substance of sufficient evidence in experimental animals. The productive toxicity: No effects known.         Specific target organ system toxicity - single exposure: No effects known.         Specific target organ system toxicity - single exposure: No effects known.         Specific target organ system toxicity - single exposure: No effects known.         Specific target organ system toxicity - in the best of our knowledge the acute and chronic toxicity of this substance.         Additional information         Toxicity         Aquatic toxicity: No further relevant information available.         Persistence and degradability No further relevant information available.         Midity in solo.         Bioaccumptication         Toxicity         Aguatic toxicity: No further relevant information available.         Bioaccumptication         Toxicity         Aguatic toxicity: No further relevant information available.         Bioaccumptication         Waste treatment methods         Recommendation Considerations         Waste treatment methods	Sensitization: No sensitizing effects kno	own.		
IARC-28: Possibly carcinogenic to humans: limited evidence in humans in the absence of sufficient evidence in experimental animals. ACGIH 44: Not classifiable as a human carcinogen: inadequate date on which to classify the agent in terms of its carcinogenicity in humans and/or animals. The Registry of Toxic Effects of Chemical Substances (RTECS) contains tumorigenic and/or carcinogenic and/or neoplastic data for this substance. Reproductive toxicity: No effects known. Sepecific target organ system toxicity - repeated exposure: No effects known. Aspiration hazard: No effects known. Subacute to chronic toxicity: The Registry of Toxic Effects of Chemical Substances (RTECS) contains multiple dose toxicity data for this substance. Additional toxicological information: To the best of our knowledge the acute and chronic toxicity of this substance is not fully known. 12 Ecological information Toxicity Aquatic toxicity: No further relevant information available. Persistence and degradability No further relevant information available. Mobility in soil No further relevant information available. Mot applicable. Other adverse effects No further relevant information available. 13 Disposal considerations Waste treatment methods Recommendation: Disposal must be made according to official regulations. 14 Transport Information UN-Number Dor, ADN, MDG, IATA Not applicable Transport hazard class(es) DOT, ADR, ADN, IMDG, IATA Class Not applicable Packing group Dor, MidG, IATA Not applicable	Carcinogenicity:			
ACGIH A4: Not classifiable as a human carcinogen: Inadequate data on which to classify the agent in terms of its carcinogenicity in humans and/or animals. The Registry of Toxic Effects of Chemical Substances (RTECS) contains tumorigenic and/or neoplastic data for this substance. Reproductive toxicity: No effects known. Specific target organ system toxicity - repeated exposure: No effects known. Aspiration hazard: No Stiects known. Subacute to chronic toxicity: The Registry of Toxic Effects of Chemical Substances (RTECS) contains multiple dose toxicity data for this substance. Additional information: To the best of our knowledge the acute and chronic toxicity of this substance is not fully known. 12 Ecological information: Toxicity Aquatic toxicity: No further relevant information available. Persistence and degradability No further relevant information available. Mobility in soil No further relevant information available. M	IARC-28: Possibly carcinogenic to huma	ans: limited evidence in humans in the absence of sufficient evidence in experimental animals.		
Reproductive toxicity: No effects known.         Specific target organ system toxicity - repeated exposure: No effects known.         Aspiration frazard: No effects known.         Subacute to chronic toxicity: The Registry of Toxic Effects of Chemical Substances (RTECS) contains multiple dose toxicity data for this substance.         Additional toxicoligical information: To the best of our knowledge the acute and chronic toxicity of this substance is not fully known.         12 Ecological information         Toxicity         Aquatic toxicolig: No further relevant information available.         Persistence and degradability No further relevant information available.         Bioaccumulative potential No further relevant information available.         Additional ecological information:         General notes: Avoid transfer into the environment.         Results of PAT and VPA assessment         PBT: Not applicable.         VPM: Not applicable.         VPM	ACGIH A4: Not classifiable as a human carcinogen: Inadequate data on which to classify the agent in terms of its carcinogenicity in humans and/or animals.			
Specific target organ system toxicity - single exposure: No effects known.         Aspiration hazard: No effects known.         Subacute to chronic toxicity: The Registry of Toxic Effects of Chemical Substances (RTECS) contains multiple dose toxicity data for this substance.         Additional toxicological information:         Toxicity         Aquatic toxicity: No further relevant information available.         Persistence and degradability No further relevant information available.         Bioaccumulative potential No further relevant information available.         Mobility in soil No further relevant information available.         Additional ecological information:         General notes: Avoid transfer into the environment.         Results of Papicable.         VPI: Not applicable.         Other adverse effects No further relevant information available.         VPI: Not applicable.         Other adverse effects No further relevant information available.         VDI: Not applicable.         Other adverse effects No further relevant information available.         VBI: Not applicable.         Other adverse effects No further relevant information available.         VII: Not applicable.         Other adverse effects No further relevant information available.         13 Disposal considerations         Waste treatment methods         Recommendation Disposal must be made ac	Reproductive toxicity: No effects known.			
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Additional toxicological information         12 Ecological information         Toxicity         Aquatic toxicity: No further relevant information available.         Persistence and degradability No further relevant information available.         Bioaccumulative potential No further relevant information available.         Mobility in soil No further relevant information available.         Additional ecological information:         General notes: Avoid transfer into the environment.         Results of PBT and VPVB assessment         PT: Not applicable.         VPVB: Not applicable.         VPVB: Not applicable.         VPUB: Not applicable.         VIncleaned packagings:         Recommendation: Disposal nust be made according to official regulations.         14 Transport information         UN-Number         DOT, ADN, IMDG, IATA         Not applicable         VD, Apple, JATA         Not applicable         Transport information         DOT, ADR, ADN, IMDG, IATA         Not applicable <th>Aspiration hazard: No effects known. Subacute to chronic toxicity: The Reg</th> <th>istry of Toxic Effects of Chemical Substances (RTECS) contains multiple dose toxicity data for this substance.</th>	Aspiration hazard: No effects known. Subacute to chronic toxicity: The Reg	istry of Toxic Effects of Chemical Substances (RTECS) contains multiple dose toxicity data for this substance.		
Toxicity Aquatic toxicity: No further relevant information available. Persistence and degradability No further relevant information available. Bioaccumulative potential No further relevant information available. Mobility in soil No further relevant information available. Additional ecological information: General notes: Avoid transfer into the environment. Results of PBT and vPvB assessment PBT: Not applicable. vPvB: Not applicable. Other adverse effects No further relevant information available.         13 Disposal considerations Waste treatment methods Recommendation: Disposal nust be made according to official regulations.         14 Transport information DOT, ADN, IMDG, IATA       Not applicable Not applicable         UN-Number DOT, ADN, IMDG, IATA       Not applicable Not applicable         Transport hazard class(es) DOT, ADN, IMDG, IATA       Not applicable         Dot, ADN, IMDG, IATA       Not applicable         Packing group DOT, ADN, IMDG, IATA       Not applicable         Packing group DOT, ADN, IMDG, IATA       Not applicable         Packing group DOT, ADN, IMDG, IATA       Not applicable	Additional toxicological information:	To the best of our knowledge the acute and chronic toxicity of this substance is not fully known.		
Aquatic toxicity: No further relevant information available.         Persistence and degradability: No further relevant information available.         Mobility in soil No further relevant information available.         Additional ecological information:         General notes: Avoid transfer into the environment.         Results of PBT and VPVB assessment         PBT: Not applicable.         Other adverse effects No further relevant information available.         13 Disposal considerations         Waste treatment methods         Recommendation: Consult state, local or national regulations to ensure proper disposal.         Uncleaned packagings:         Recommendation: Disposal must be made according to official regulations.         14 Transport information         UN-Number         DOT, ADN, IMDG, IATA         DOT, ADR, ADN, IMDG, IATA         Not applicable         Packing group         DOT, ADR, ADN, IMDG, IATA         Not applicable         Packing group         DOT, ADR, ADN, IMDG, IATA         Not applicable         Packing group         DOT, ADR, ADN, IMDG, IATA         Not applicable         Packing group         DOT, ADR, ADN, IMDG, IATA         Not applicable         Packing group	12 Ecological information			
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VPVB: Not isplicable.         Other adverse effects No further relevant information available.         13 Disposal considerations         Waste treatment methods         Recommendation Consult state, local or national regulations to ensure proper disposal.         Uncleaned packagings:         Recommendation: Disposal must be made according to official regulations.         14 Transport information         UN-Number         DOT, ADN, IMDG, IATA         Not applicable         Transport hazard class(es)         DOT, ADR, ADN, IMDG, IATA         Not applicable         Packing group         DOT, IMDG, IATA         Not applicable	Results of PBT and vPvB assessment			
Other adverse effects No further relevant information available.         13 Disposal considerations         Waste treatment methods         Recommendation Consult state, local or national regulations to ensure proper disposal.         Uncleaned packagings:         Recommendation: Disposal must be made according to official regulations.         14 Transport information         UN-Number         DOT, ADN, IMDG, IATA       Not applicable         UN proper shipping name         DOT, ADN, IMDG, IATA         Not applicable         Transport hazard class(es)         DOT, ADR, ADN, IMDG, IATA         Not applicable         Packing group         DOT, IMDG, IATA         Not applicable	PBT: Not applicable. vPvB: Not applicable.			
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14 Transport information         UN-Number         DOT, ADN, IMDG, IATA         Not applicable         UN proper shipping name         DOT, ADN, IMDG, IATA         Not applicable         Transport hazard class(es)         DOT, ADR, ADN, IMDG, IATA         Not applicable         Packing group         DOT, IMDG, IATA         Not applicable	Uncleaned packagings:			
UN-Number       Not applicable         DOT, ADN, IMDG, IATA       Not applicable         UN proper shipping name       Not applicable         DOT, ADN, IMDG, IATA       Not applicable         Transport hazard class(es)       DOT, ADR, ADN, IMDG, IATA         DOT, Solar       Not applicable         Packing group       Not applicable         DOT, IMDG, IATA       Not applicable	Recommendation: Disposal must be m	ade according to official regulations.		
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Transport hazard class(es)         DOT, ADR, ADN, IMDG, IATA         Class       Not applicable         Packing group       Not applicable         DOT, IMDG, IATA       Not applicable		Not applicable		
Transport hazard class(es)         DOT, ADR, ADN, IMDG, IATA         Class       Not applicable         Packing group       Not applicable         DOT, IMDG, IATA       Not applicable	UN proper shipping name DOT, ADN, IMDG, IATA	Not applicable		
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(Contd. of page 3)
Not applicable.
Not applicable.
d the IBC Code Not applicable.
No
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cific for the substance or mixture cordance with 29 CFR 1910 (OSHA HCS)
e read and understood. ion. cal/regional/national/international regulations. tal Protection Agency Toxic Substances Control Act Chemical substance Inventory. stic Substances List (DSL). ce is not listed. ed. y qualified individuals. EACH Regulations (EC) No. 1907/2006. Substance is not listed. hnex XVII of the Regulation (EC) No 1907/2006 (REACH) for the manufacturing, placing on the on for use) Substance is not listed. has not been carried out.
other information gathered by them, and should make independent judgement of suitability of this try of employees. This information is furnished without warranty, and any use of the product not in tion with any other product or process, is the responsibility of the user. uropean Agreement concerning the International Carriage of Dangerous Goods by Road) USA