

## Safety Data Sheet acc. to OSHA HCS



(Contd. on page 2)

(Contd. of page 1)

	(Contd. of page 1)
4 First-aid measures	
Description of first aid measures	
<b>After inhalation</b> Supply fresh air. If required, provide artificial respiration. Keep patient warm. Seek immediate medical advice.	
Seek immediate medical advice. After skin contact	
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 eye contact Rinse opened eye for several minutes under running water. Then consult a doctor. After swallowing Seek medical treatment. Information for doctor	
Most important symptoms and effects, both acute and delayed Causes skin irritation.	
Causes serious eye irritation. May cause respiratory irritation.	
Indication of any immediate medical attention and special treatment needed No further relevant information available.	
5 Fire-fighting measures	
Extinguishing media	
Suitable extinguishing agents Carbon dioxide, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam. Special hazards arising from the substance or mixture	
If this product is involved in a fire, the following can be released: Carbon monoxide and carbon dioxide	
Ruthenium oxide	
Advice for firefighters Protective equipment: Wear self-contained respirator.	
Wear self-contained respirator. Wear fully protective impervious suit.	
6 Accidental release measures	
Personal precautions, protective equipment and emergency procedures	
Wear protective equipment. Keep unprotected persons away. Ensure adequate ventilation	
Environmental precautions: Do not allow material to be released to the environment without proper governmental permits. Methods and material for containment and cleaning up: Ensure adequate ventilation.	
Prevention of secondary hazards: No special measures required. Reference to other sections	
See Section 7 for information on safe handling	
See Section 8 for information on personal protection equipment. See Section 13 for disposal information.	
7 Handling and storage	
7 Handling and storage Handling	
Precautions for safe handling	
Keep container tightly sealed. Store in cool, dry place in tightly closed containers. Ensure good ventilation at the workplace.	
Ensure good ventilation at the workplace. Information about protection against explosions and fires: No information known.	
Conditions for safe storage, including any incompatibilities	
Storage Requirements to be met by storerooms and receptacles: No special requirements.	
Information about storage in one common storage facility: Store away from oxidizing agents.	
Further information about storage conditions:	
Store in cool, dry conditions in well sealed containers. <b>Specific end use(s)</b> No further relevant information available.	
8 Exposure controls/personal protection	
Additional information about design of technical systems:	
Properly operating chemical fume hood designed for hazardous chemicals and having an average face velocity of at least 100 feet per minute.	
Control parameters Components with limit values that require monitoring at the workplace:	
The product does not contain any relevant quantities of materials with critical values that have to be monitored at the workplace. Additional information: No data	
Exposure controls	
Personal protective equipment General protective and hygienic measures	
The usual precautionary measures for handling chemicals should be followed. Keep away from foodstuffs, beverages and feed.	
Remove all solled and contaminated clothing immediately. Wash hands before breaks and at the end of work.	
Avoid contact with the eves and skin.	
Maintain an ergonomically appropriate working environment. Breathing equipment: Use suitable respirator when high concentrations are present.	
Recommended filter device for short term use: Use a respirator with type N95 (USA) or PE (EN 143) cartridges as a backup to engineering controls. Risk assessment should be performed to det	ermine if air-
purifying respirators are appropriate. Only use equipment tested and approved under appropriate government standards.	
Profection of hands:	
Check protective gloves prior to each use for their proper condition. The selection of suitable gloves not only depends on the material, but also on quality. Quality will vary from manufacturer to manufacturer.	
Material of gloves Nitrile rubber, NBR	
Penetration time of glove material (in minutes) 480 Glove thickness 0.11 mm	
Eye protection: Safety glasses Body protection: Protective work clothing.	
	USA USA

Product name: Ruthenium(III) 2,4-pentanedionate

Information on toxicological effects Acute toxicity: No effects known. LD/LC50 values that are relevant for classification: No data Skin irritation or corrosion: Causes serious eye irritation. Eye irritation or corrosion: Causes serious eye irritation. Sensitization: No sensitization or corrosion: Causes serious eye irritation. Sensitization: No sensitization or corrosion: Causes serious eye irritation. Sensitization: No sensitization of the classification at all on carcinogenic properties of this material is available from the EPA, IARC, NTP, OSHA or ACGIH. 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. Specific target organ system toxicity - repeated exposure: No effects known. Carcinogenic categories Octication of the best of our knowledge the acute and chronic toxicity of this substance is not fully known. Carcinogenic categories OSHA-C6 (Occupational Safety & Health Administration) Substance is not listed.  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. Mobili			(Contd. of page 2)		
General Information From: From	9 Physical and chemical propertie	S			
Appearance:         Cynathine           Ober         Mod addermined           Address         Mod addermined           Boling portfollowing range:         Mod addermined           Damper of explosion:         Mod addermined           Upper:         Mod addermined           Upperof explosion:         Mod addermined		hemical properties			
Prom:         Crystalline Description           Physics         Not determined           Physics         Not determined           Physics         Not determined           Physics         Not determined           Charge in condition maining pointWolfing range:         Not determined           Sublimitation completative 3 and the completation of the condition of the condith condithe condition of the condithe condition of the condition					
Odor         Net applicable.           Hrvature:         Net applicable.           Change in condition:         Page of specific and the second applicable.           Builting Dongstaffer         Net applicable.           Builting Dongstaffer         Net applicable.           Depression:         Net depression:           Vapor pression:         Net depression:           <	Form:				
ortherates:         Not applicable.           Change in control form ange:         250 °C (260 °F) (dec)           Subtinistion emperature' starts.         Mot determined           Paramability (solid genous)         Mot determined           Derage of explosion:         Mot determined           Lower:         Mot determined           Upper:         Mot determined           Derage of explosion:         Mot determined           Upper:         Paraticible					
Charge in condition       Particle of Condition         Mething point interpretative 'start.       Not determined         Paramability (cited association)       Not determined					
Boling controllog in angle in the second seco					
Sublition temperature:         Not determined           Auto gaining         Not determined           Description temperature:         Not determined           Auto gaining:         Not determined           Description temperature:         Not determined           Description temperature:         Not determined           Description temperature:         Not determined           Description:         Not determined           Description:         Not determined           Upware:         Not determined           Description:         Not determined           Upware:         Not determined           Description:         Not determined           Versponsition reture:         Not applicable           Synthm:         Not applicable           Synthm:         Not applicable           Other Information         Not applicable           Other Information         Not applicable           Control Information Information         Not applicable           Control Information Information         Not applicable           Control Information Information and stored according to specifications.           Conditions to applicable         Description           Conditions on and stored according to specifications.           Conditions to appli	Melting point/Melting range:				
Flammability (solid, gascous)       Mcd determined         Auto applicing:       Mcd determined         Auto applicing:       Ncd determined         Jange of septosion:       Ncd determined         Logo:       Ncd determined         Jange of septosion:       Ncd determined         Logo:       Ncd determined         Jange of septosion:       Ncd determined         Logo:       Ncd determined         Valor pressure:       Ncd determined         Valor pressure: <th>Sublimation temperature / start</th> <th></th> <th></th>	Sublimation temperature / start				
Gecomposition temperature:         Mrd determined Mrd determined           Jawn gantary Depression temperature:         Nrd determined Mrd determined           Depression temperature:         Nrd determined           Depression temperature:         Nrd determined           Depression temperature:         Nrd determined           Variant         Nrd determined           Variante         Nrd determined	Flammability (solid, gaseous)	Not determined.			
Danger of explosion:         Not determined           Explosion initiats:         Not determined           Explosion initiats:         Not determined           Upper:         Not determined           Vapor ressure:         Not applicable.           Vapor ressure:         Not applicable.           Vapor dessure:         Not applicable.           Vapor ressure:         Not applicable.           Other information         Not desplicable.           Other information         No luther resonance destroge conditions.           Thermal descarbing vision reactions Reactions with storag caudition genets         No luther vision and stored according to specifications.           Pressure:         No luther vision and storage cauditions of the service?         No luther vision and storage caudition and storage cauditions.           Pressure:         No luther vision and storage caudition and storage cauditions.         Not service and storage cauditions.           Pressure:         Not applicable.         Not service and storage cauditions.           Pressure:         Not applic	Decomposition temperature:				
Explosion linits: Use of the determined of the second seco					
Lower: Mod generalized by the second of the		Not determined.			
Vacion pressure:         Not applicable.           Printig:         Not applicable.           Vacion density         Not applicable.           Mematic:         Not applicable.           Otablity and reactivity         No further relevant Information available.           Otablity and reactivity         No further relevant Information available.           Otablity and reactivity         No further relevant Information available.           Thomas decomposition / conditions to be avoided: Decomposition will not occur if used and stored according to specifications.           Pressibility of anomatics         No further relevant Information available.           Information on toxicological Information         No data           Information on covicological offorts         Action of available.           Activity No fields known.         Courses skin initiation.           Germedity: No fields known.         Courses skin initiation.           Germedity: No fields known.         Courses skin initiation.           Germedity: No fields	Lower:				
Density:         Not determined waar determine detetermine determine detetetre determine determine det					
Vacor density         Not applicable.           Vergenation relationship         Not applicable.           Vergenation relationship         Not applicable.           Vergenation relationship         Not applicable.           Partition coefficient (n-octanol/water): Not determined.         Not applicable.           Use only in the internation         Not applicable.           Other information in Not supplicable.         Not applicable.           Other information information information available.         Not applicable.           Other information information information available.         Not supplicable.           Partition coefficient (n-octanol/water): Not determined.         Stability and reactivity           Reactivity Not information information available.         Not supplicable.           Parallity and reactivity of the information available.         Not supplicable.           Conditions to avoid No further relevant information available.         Not applicable.           Information on toxicological effects         Not applicable.           Authonium code         Not applicable.           Stability Not applicable.         Not applicable.           Stability Instance on toxicological effects         Not applicable.           Authonium code         Not applicable.           Stability Not associate dato an carinagenic properties of this material is available from	Density:	Not determined			
Evenoportion rate         Not applicable.           Within the activity         Partition coefficient (n-octanol/water): Not determined.           Witcoship:         Not applicable.           Partition coefficient (n-octanol/water): Not determined.         Not applicable.           Other Information         Not applicable.           Other Information         Not further celevant information available.           Other Information         Not further celevant information available.           Other Information available.         Control in further celevant information available.           Other Information available information available.         Control in further celevant information available.           If Toxicological information         Control in further celevant information available.           If Toxicological information         Control information           Mort applicable information         Control information           Sensitization: No sensitizing effects known.         Control information           Germ coll moutpencient, No effects known.         Control information information.           Sensitization: No sensitizing effects known.         Control information information.           Sensitization: No sensitizing effects known.         Control information information.           Sensitization: No sensitizing effects known.         Control information information in tokiclo information.           <					
Water:         Farly soluble           Partition:         Control of the term (in-cetanol/water): KNI determined.           Water:         Kinematic:           Water:         Kinematic:           Of solution:         Not applicable           Other information         Not information available.           Of solution:         Not information known.           Control information known.         Control information information solutions.           Pressibility of history of the available.         Not information information known.           Conditions to available individue and information available.         Not information information available.           Heardwall with store ovailable.         Not information information available.           How solution:         Not information information available.           Heardwall with store ovailable.         Not information information available.           How solution in this black and earbon dioxide         Not information.           Stability of control information         No data           Stability and earbon information.         Stability with information.           Conditions to available.         Not information.           How solution in this black anown.         Conditions.           Conditions to available.         Not information.           Sectific targol organ system toxicity - repoe	Evaporation rate				
Particip coefficient (in-octanol/water): Not determined:         Viscoshy:       Not applicable         Other information       Not further relevant information available.         OB Stability and reactivity         Reactivity No information known.         Chemic Information       No Explicable         Chemic Information       No Further relevant information available.         Conditions to void No further relevant information available.       No further relevant information available.         Conditions to void No further relevant information available.       No further relevant information available.         Information on toxicological officets       Rate available.         Information on toxicological officets       No faither office available.         Provide No further olevant information       No faither olevant information         Information on toxicological officets known.       No faither olevant information.         Dift Concological information       No faither olevant information.         Reproductive to solid No further olevant information.       No faither olevant information.         Sensitization: No sensitizing effects known.       Sensitization:         Sensitization: Sensitizing effects known.       Sensitization:         Specific target organ system toxicity - repeated exposure: No effects known.       Seconditization:         Specific target organ system toxicity - r		Partly soluble			
dynamic:         Not applicable:           Other information         Not applicable:           Possibility of hazardous rections Reads with strong oxiding agents:         School (Strong agents)           Conditions to avail to further relevant information available:         Information on toxicological effects           Incompatible materials: civicitizing agents:         School (Strong agents)         School (Strong agents)           Sensitization: No sensitizing effects known.         School (Strong agents)         School (Strong agents)           Sensitization: No sensitizing effects known.         Sensitization: No sensitizing effects known.         Sensitization: Sensitization: Strong exposure: No affects known.           Specific target organ system toxicity - senset with strong oxidiate exposure: No affects known.         Sensitization: Strong exposure: No affects known.           Specific target organ system toxicity - senset or our knowledge the acute and chronic toxicity of this substance is nof	Partition coefficient (n-octanol/water				
More matic:         Not siplicable: No further relevant information available.           Other information         No further relevant information available.           O Stability and reactivity         Reactivity No information known. Chemical stocymposition / Conditions to be available: Normation available: Decomposition will not occur if used and stored according to specifications. Formal decomposition / Conditions to be available: Normation available: Decomposition will not occur if used and stored according to specifications. Formal decomposition products: Normation available: Decomposition will not occur if used and stored according to specifications. Formal decomposition products: Normation on toxicological effects Actuate toxicity: No effects known. Information on toxicological effects Actuate toxicity: No effects known. Shin intributor accorsolin: Causes series relation. Somitization or corrosion: Causes series relation. Somitization series known. Actinogenic toxicity: No effects known. Actinomatic vice dicets known. Societic target organ system toxicity - repeated exposure: May cause responsery intation. Carringenic categories Solid-Ca (Cocceptional Starty & Health Administration) Substance is not listed.           12 Ecological information Parity for vicity: No effects known. Actinomation coxicity of third relevant information available. Beastencene ad begradability No furth	dvnamic:	Not applicable.			
10       Stability and reactivity         Reactivity No information known.         Thermal decomposition / conditions to be avoided: Decomposition will not occur if used and stored according to specifications.         Possibility of hazardous reactions Reacts with storag oxidizing agents         Conditions to a void No huther relevant information available.         Hearnows decomposition and carbon dioxide         Rathenium on toxicological information         Ruthenium oxide         11       Toxicological information         Information on toxicological effects         Active foxicity. No effects known.         Sensitization - Corrosion: Causes service relevant information experiments of the available from the EPA, IARC, NTP, OSHA or ACGIH.         Sensitization: No sensitizing effects known.         Specific target organ system foxicity - separeted exposure: No effects known.         Specific target organ system foxicity - separeted exposure: May cause respiratory intation.         Subsective to chronic boxicity. No effects known.         Subsectite chronic categories		Not applicable.			
Reactivity No information known.         Chemical stability Stabie under recommended storage conditions:         Thermal decomposition / conditions to be avoided: Decomposition will not occur if used and stored according to specifications.         Possibility of hazardous reactions React with storag oxidaling agents incompatible materials: Oxidizing agents information available.         Hazardous decomposition products:         Carbon monoxide and carbon dioxide Kuthenium ont oxicological effects Authenium ont oxicological effects Skin irritation or corrosion: Causes series with string oxida.         11 Toxicological information Information or corrosion: Causes series with string oxida.         Series Skin irritation or corrosion: Causes series with string oxida.         Series String and Carbon dioxide Kuthenium or corrosion: Causes series with string oxida.         Series String and Carbon dioxide String and the carbon dioxide string on the corrosion: Causes series with string oxida.         Series String and Carbon dioxide strong.         Series Strong andioxide strong and carbon dioxide strong. <th>Other mormation</th> <th></th> <th></th>	Other mormation				
Reactivity No information known.         Chemical stability Stabie under recommended storage conditions:         Thermal decomposition / conditions to be avoided: Decomposition will not occur if used and stored according to specifications.         Possibility of hazardous reactions React with storag oxidaling agents incompatible materials: Oxidizing agents information available.         Hazardous decomposition products:         Carbon monoxide and carbon dioxide Kuthenium ont oxicological effects Authenium ont oxicological effects Skin irritation or corrosion: Causes series with string oxida.         11 Toxicological information Information or corrosion: Causes series with string oxida.         Series Skin irritation or corrosion: Causes series with string oxida.         Series String and Carbon dioxide Kuthenium or corrosion: Causes series with string oxida.         Series String and Carbon dioxide String and the carbon dioxide string on the corrosion: Causes series with string oxida.         Series String and Carbon dioxide strong.         Series Strong andioxide strong and carbon dioxide strong. <th>10 Stability and reactivity</th> <th></th> <th></th>	10 Stability and reactivity				
Chemical stability Stable under recommended storage conditions. Thermal decomposition / conditions to be avoided: Decomposition will not occur if used and stored according to specifications. Possibility of hazardous reactions Reacts with storag oxidizing agents Hazardous decomposition products: Carbon monoxide and calculation If <b>Toxicological information</b> Information on toxicological effects Automoties and calculation of the storage conditions. Fy effection or corrosion: Causes skin initiation. Serie first on corrosion: Causes skin initiation. Eye irritation or corrosion: Causes skin initiation. Serie first on corrosion: Causes skin initiation. Bern cell mutagenicity: No effects known. Gern cell mutagenicity: No effects known. Serie first or corrosion: Causes skin initiation. 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 - repeated exposure: No effects known. Specific target organ system toxicity - repeated exposure: No effects known. Caronogenic categories OstA-Ca (Occupational Safety & Health Administration) Substance is not listed. Electological information Toxicity Aquatic toxicity: No further relevant information available. Persistence and degradability No further relevant informat					
Possibility of hazardous reactions Reacts with strong oxidizing agents Conditions to avoid No thirther relevant information available. Incompatible materials: Oxidizing agents Carbon monoxide and carbon dioxide Ruthenium oxide Information on toxicological effects Acute toxicity: No effects known. LDUC SGV values that are relevant for classification: No data Skin irritation or corrosion: Causes skin irritation. Eye irritation or corrosion: Causes skin irritation. Sensitization: No sensitizing effects known. Sensitization: No sensitized in or corrosion: Causes skin irritation. Sensitization: No sensitized in a carbinogenic properties of this material is available from the EPA, IARC, NTP, OSHA or ACGIH. Reproductive toxicity: No effects known. Specific target organ system toxicity - repeated exposure: No offects known. Specific target organ system toxicity - single exposure: No offects known. Specific target organ system toxicity - single exposure: No offects known. Specific target organ system toxicity - single exposure: No offects known. Specific target organ system toxicity - single exposure: No offects known. Carcinogenic categories Carcinogenic ategories Carcinogenic information Toxicity Mobility in of urther relevant information available. Bioaccumulative potential No further relevant information available. B	Chemical stability Stable under recom	nmended storage conditions.			
Conditions to avoid No further relevant information available. Control of the substance is not fully known. Carlon monotify and carlon dioxide Rule toxicity: No effects known. Sensitization: No sensitization or corrosion: Causes serious eye initiation. Eye irritation or corrosion: Causes serious eye initiation. Germ cell mutagenicity: No effects known. Germ cell mutagenicity: No effects known. Germ cell mutagenicity: No effects known. Specific targe organ system toxicity - single exposure: Mo effects known. Specific targe organ system toxicity - single exposure: Mo effects known. Asperiation hazard: No effects known. Additional toxicological Information: To the best of our knowledge the acute and chronic toxicity of this substance is not fully known. Carcinogenic categories OSHA-Ca (Occupational Safety & Health Administration) Substance is not listed. Zecological Information Toxicity Aquatic toxicity: No further relevant information available. Bioaccumulative potential No further relevant information available. Additional scaled geradability No turther relevant information available. Bio not allow undiluded product or large quantities to reach ground water, water course or sewage system. Avoid transfer into the environment without proper governmental permits. Do not allow undiluded product or large quantities to reach ground water, water course or sewage system. Avoid transfer into the environment. Resonmendation: Disposal considerations	Possibility of hazardous reactions R	to be avoided: Decomposition will not occur it used and stored according to specifications. leacts with strong oxidizing agents			
Hzardous decomposition products: Carbon monoxide and carbon dioxide Ruthenium oxide         (1 Toxicological information Information on toxicological effects Acute toxicity: No effects known. Ub/L CS values that are relevant for classification: No data Sum Inflation or correspon: Causes skin inflation. Semiinization in No sensitization gefects known. Germ cell mutagenicity: No effects known. Garcinogenicity: No effects known. Germ cell mutagenicity: No effects known. Garcinogenicity: No effects known. Specific target organ system toxicity - repeated exposure: No effects known. Appiration hazard: No effects known. Subacute to chronic toxicity: No effects known. Appiration hazard: No effects known. Subacute to chronic toxicity: No effects known. Appiration hazard: No effects known. Appiration azard: No effects known. Appiration azard: No effects known. Additional toxicological information: To the best of our knowledge the acute and chronic toxicity of this substance is not fully known. Carcinogenic categories OSHA-Ca (Occupational Safety & Health Administration) Substance is not listed.         12 Ecological information Toxicity Mautic toxicity: No effects to relevant information available. Bioaccumulative potential No further relevant information available. Additional ecological information: Don allow unditied product or large quantities to reach ground water, water course or sewage system. Avoid transfer into the environment without proper governmental permits. Don allow unditied product or large quantities to reach ground water, water course or sewage system. Avoid transfer into the environment without proper governmental permits. Don allow unditied product or large quantities to reach ground water, water course or sewage system. Avoid transfer into the environment without proper governmental permits. Don allow unditied product or large quantities to reach ground water, water course or sewage system. Avoid transfer into the envi	Conditions to avoid No further relevant	nt information available.			
Carbon monoxide and carbon dioxide Ruthenium oxide I1 Toxicological information Information on toxicological effects Acute toxicity: No effects known. LD/LC50 values that are relevant for classification: No data Skin irritation or corrosion: Causes serious eye irritation. Eye Irritation or corrosion data on carcinogenic properties of this material is available from the EPA, IARC, NTP, OSHA or ACGIH. Reproductive toxicity: vo effects known. Specific target organ system toxicity - repeated exposure: No effects known. Specific target organ system toxicity - single exposure: No effects known. Carcinogenic takegories OSHA-C3 (Occupational Safety & Health Administration) Substance is not listed. I2 Ecological Information Toxicity Aquatic toxicity: No further relevant information available. Bioaccumulative potential No further relevant information available. Bioaccumulative potential No further relevant information available. Cont allow unditied product or large quantities to reach group everymental permits. Do not allow unditied product or large quantities to reach group everymental permits. Do not allow unditied product or large quantities to reach group everymental permits. Contractions Carlies into the environment. Results of PBT and vPVB assessment PBT Not applicable. Recommendation: Displicable. Recommendation consult state, local or national regulations to ensure proper disposal. Recommendation: Disposal must be made according to oficial regulations.	Hazardous decomposition products:	anis			
11 Toxicological information         Information on toxicological effects         Acute toxicity: No effects known.         LDILC50 values that are relevant for classification.         Eye irritation or corrosion: Causes serious eye irritation.         Sensitization in No sensitization or corrosion: Causes kni intration.         Eye irritation or corrosion: Causes kni intration.         Germ cell mutagenicity: No effects known.         Garcinogenicity: 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.         Additional toxicological information: To the best of our knowledge the acute and chronic toxicity of this substance is not fully known.         Carcinogenic categories         OSH-Ca (Occupational Safety & Health Administration) Substance is not listed.         12 Ecological information         Toxicity         Additional ecological information available.         Boaccumulative potential No further relevant information available.         Boaccumulative potential No further relevant information available.         Additional ecological information         Additional ecological information         Do not allow indikiled product or large quantiles to reach ground water, water course or sewage system.	Carbon monoxide and carbon dioxide				
Information on toxicological effects Acute toxicity: No effects known. LD/LC50 values that are relevant for classification: No data Skin irritation or corrosion: Causes serious eye irritation. Eye irritation or corrosion: Causes serious eye irritation. Sensitization: No sensitization or corrosion: Causes serious eye irritation. Sensitization: No sensitization or corrosion: Causes serious eye irritation. Sensitization: No sensitization of the classification at all on carcinogenic properties of this material is available from the EPA, IARC, NTP, OSHA or ACGIH. 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. Specific target organ system toxicity - repeated exposure: No effects known. Carcinogenic categories Octication of the best of our knowledge the acute and chronic toxicity of this substance is not fully known. Carcinogenic categories OSHA-C6 (Occupational Safety & Health Administration) Substance is not listed.  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. Mobili	Rumenium oxide				
Acute toxicity: No effects known. LD/LC50 values that are relevant for classification: No data Skin irritation or corrosion: Causes serious eye irritation. Sensitization or corrosion: Causes serious eye irritation. Sensitization: No sensitizing effects known. Gerricogenicity: 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 - repeated exposure: No effects known. Specific target organ system toxicity - repeated exposure: Nay cause respiratory irritation. Aspiration hazard: No effects known. Additional toxicological information: To the best of our knowledge the acute and chronic toxicity of this substance is not fully known. Carcinogenic categories OSHA-Ca (Occupational Safety & Health Administration) Substance is not listed. 22 Ecological information Toxicity Aquatic toxicity: No further relevant information available. Bioaccumulative potential No turther relevant information available. Bio not allow material to be released to the environment without proper governmental permits. Do not allow material to be released for enable ground water, water course or sewage system. Avoid transfer into the environment. Results of BT and VPVB assessment	11 Toxicological information				
LDJ.C50 values that are relevant for classification: No data Skin infration or corrosion: Causes skin infration. Eye inflation or corrosion: Causes skin infration. Sensifization was a skin infration and the sensitive skin infration of the sensitive skin infration of the sensitive skin infration and the sensitive skin infration of the sensitive skin information and the sensitive skin infration of the sensitive skin infration and the sensitive skin infration of the sensitive skin infration and the sensitive skin information and the sensitive skin infration and the sensitive skin infration and the sensitive skin information and the sensitive skin infration and the sensitive skin	Information on toxicological effects				
Eve irritation or corrosion: Causes serious eye irritation. Sensitization: No sensitization: No sensitizing effects known. Garcinogenicity: No effects known. Specific target organ system toxicity - single exposure: No effects known. Specific target organ system toxicity - single exposure: May cause respiratory irritation. Aspiration hazard: No effects known. Subacute to chronic toxicity: No the best of our knowledge the acute and chronic toxicity of this substance is not fully known. Carcinogenic categories OSHA-Ca (Occupational Safety & Health Administration) Substance is not listed. 22 Ecological information Toxicity Aquatic toxicity: No further relevant information available. Bioaccumulative potential No further relevant information available. Bioaccumulative potential No further relevant information available. Additional ecological information: General notes: Do not allow material to be released to the environment without proper governmental permits. Do not allow undiluted poduct or large quantities to reach ground water, water course or sewage system. Avoid transfer into the environment. Results of PBT and VPB assessment PBT: Not applicable. VPW: No turther relevant information available. 32 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. USA-	LD/LC50 values that are relevant for				
Sensitization: No sensitizing effects known. Germ cell mutagenicity: 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 - single exposure: No effects known. Specific target organ system toxicity - single exposure: No effects known. Aspiration hazard: No effects known. Subacute to chronic toxicity: No effects known. Additional toxicological information: To the best of our knowledge the acute and chronic toxicity of this substance is not fully known. Carcinogenic categories OSHA-Ca (Occupational Safety & Health Administration) Substance is not listed. 22 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. Mobility 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. USA					
Germ cell mutagenicity: No effects known. Carcinogenicity: No effects known. Specific target organ system toxicity - repeated exposure: No effects known. Specific target organ system toxicity - repeated exposure: May cause respiratory irritation. Aspiration hazard: No effects known. Subacute to chronic toxicity: No effects known. Subacute to chronic toxicity: No effects known. Additional toxicological information: To the best of our knowledge the acute and chronic toxicity of this substance is not fully known. Carcinogenic categories OSHA-Ca (Occupational Safety & Health Administration) Substance is not listed. 22 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. Bioaccumulative potential No further relevant information available. Bioaccumulative potential No further relevant information available. Additional ecological information: General notes: Do not allow material to be released to the environment without proper governmental permits. Do not allow undiluted product or large quantities to reach ground water, water course or sewage system. Avoid transfer into the environment. PBT: Not applicable. VME: Not applicable. VME: Not applicable. Material to be released to the relevant information available. FBT: Not applicable. Ofter adverse effects No further relevant information available. 32 Disposal considerations Waste treatment methods Recommendation Consult state, local or national regulations to ensure proper disposal. Work: Not applicable. Waste treatment methods Recommendation: Disposal must be made according to official regulations. USA-	Sensitization: No sensitizing effects ki	nown			
Reproductive foxicity: No effects known.       Specific target organ system toxicity - repeated exposure: No effects known.         Specific target organ system toxicity - single exposure: May cause respiratory irritation.       Aspiration hazard: No effects known.         Aspiration hazard: No effects known.       Additional toxicological information: To the best of our knowledge the acute and chronic toxicity of this substance is not fully known.         Carcinogenic categories       OSHA-Ca (Occupational Safety & Health Administration) Substance is not listed.         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       available.       Mobility in soil No further relevant information available.         Mobility in soil No further relevant information available.       Mobility in soil No further relevant information available.         Mobility in soil No further relevant information available.       Mobility in soil No further relevant information available.         Mobility in soil No further relevant information available.       Mobility in soil No further relevant information available.         Mobility in soil No further relevant information available.       Mobility in soil No further relevant information available.         Bo not	Germ cell mutagenicity: No effects kr	10WN.			
Specific target organ system toxicity - repeated exposure: No effects known. Specific target organ system toxicity - single exposure: May cause respiratory irritation. Aspiration hazard: No effects known. Additional toxicological information: To the best of our knowledge the acute and chronic toxicity of this substance is not fully known. Carcinogenic categories OSHA-Ca (Occupational Safety & Health Administration) Substance is not listed. <b>12 Ecological information</b> Toxicity Aquatic toxicity: No further relevant information available. Persistence and degradability No further relevant information available. Bioaccumulative potential No further relevant information available. Bioaccumulative potential No further relevant information available. Mobility in soil No further relevant information available. Mobility in soil No further relevant information available. Additional ecological information: General notes: Do not allow material to be released to the environment without proper governmental permits. Do not allow undiluted product or large quantities to reach ground water, water course or sewage system. Avoid transfer into the environment. Results of PBT and vPvB assessment PBT. Not applicable. VPVE: Not applicable. VPVE: Not applicable. VPVE: Not applicable. 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. USA-	Reproductive toxicity: No effects know	wn.			
Aspiration hazard: No effects known. Additional toxicological information: To the best of our knowledge the acute and chronic toxicity of this substance is not fully known. Carcinogenic categories OSHA-Ca (Occupational Safety & Health Administration) Substance is not listed. 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. Bioaccumulative potential No further relevant information available. Mobility in soil No further relevant information available. Additional ecological information: General notes: Do not allow material to be released to the environment without proper governmental permits. Do not allow unditude product or large quantities to reach ground water, water course or sewage system. Avoid transfer into the environment. Results of PBT and VPVB assessment PBT: Not applicable. VPVB: Not applicable. 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. USA-	Specific target organ system toxicity	/ - repeated exposure: No effects known.			
Additional toxicological information: To the best of our knowledge the acute and chronic toxicity of this substance is not fully known. Carcinogenic categories OSHA-Ca (Occupational Safety & Health Administration) Substance is not listed. 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. Do not allow undiluted product or large quantities to reach ground water, water course or sewage system. 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. USA	Aspiration hazard: No effects known.				
Carcinogenic categories OSHA-Ca (Occupational Safety & Health Administration) Substance is not listed. 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: Do not allow undiluted product or large quantities to reach ground water, water course or sewage system. 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: Disposal must be made according to official regulations. USA-	Subacute to chronic toxicity: No effects known.				
OSHA-Ča (Occupational Safety & Health Administration) Substance is not listed.  I2 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: Do not allow material to be released to the environment without proper governmental permits. Do not allow undiluted product or large quantities to reach ground water, water course or sewage system. 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. I3 Disposal considerations Waste treatment methods Recommendation: Disposal must be made according to official regulations. USA					
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. Do not allow undiluted product or large quantities to reach ground water, water course or sewage system. Avoid transfer into the environment. Results of PBT and VPVB assessment PBT: Not applicable. VPVB: Not applicable. VPVB: Not applicable. VPVB: Not applicable. VPVB: Not applicable. Vaste treatment methods Recommendation Consult state, local or national regulations to ensure proper disposal. Uncleaned packagings: Recommendation: Disposal must be made according to official regulations. USA	OSHA-Ca (Occupational Safety & Health Administration) Substance is not listed.				
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. Do not allow undiluted product or large quantities to reach ground water, water course or sewage system. Avoid transfer into the environment. Results of PBT and VPVB assessment PBT: Not applicable. VPVB: Not applicable. VPVB: Not applicable. VPVB: Not applicable. VPVB: Not applicable. Vaste treatment methods Recommendation Consult state, local or national regulations to ensure proper disposal. Uncleaned packagings: Recommendation: Disposal must be made according to official regulations. USA	12 Ecological information				
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: Do not allow material to be released to the environment without proper governmental permits. Do not allow undiluted product or large quantities to reach ground water, water course or sewage system. Avoid transfer into the environment. Results of PBT and vPvB assessment PBT: Not applicable. VVB Not applicable. Other adverse effects No further relevant information available. I3 Disposal considerations Waste treatment methods Recommendation: Disposal must be made according to official regulations. USA –	_				
Bioaccumulative potential No further relevant information available. Mobility in soil No further relevant information: General notes: Do not allow material to be released to the environment without proper governmental permits. Do not allow undiluted product or large quantities to reach ground water, water course or sewage system. 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 Consult state, local or national regulations to ensure proper disposal. Uncleaned packagings: Recommendation: Disposal must be made according to official regulations. USA	Aquatic toxicity: No further relevant in	formation available.			
Additional ecological information: General notes: Do not allow material to be released to the environment without proper governmental permits. Do not allow undiluted product or large quantities to reach ground water, water course or sewage system. 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 Consult state, local or national regulations to ensure proper disposal. Uncleaned packagings: Recommendation: Disposal must be made according to official regulations. USA	<b>Persistence and degradability</b> No fun <b>Bioaccumulative potential</b> No further	ther relevant information available. relevant information available			
General notes: Do not allow material to be released to the environment without proper governmental permits. Do not allow undiluted product or large quantities to reach ground water, water course or sewage system. 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 Consult state, local or national regulations to ensure proper disposal. Uncleaned packagings: Recommendation: Disposal must be made according to official regulations. USA	Mobility in soil No further relevant info	ormation available.			
Do not allow material to be released to the environment without proper governmental permits. Do not allow undiluted product or large quantities to reach ground water, water course or sewage system. 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 Consult state, local or national regulations to ensure proper disposal. Uncleaned packagings: Recommendation: Disposal must be made according to official regulations. USA –	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 Consult state, local or national regulations to ensure proper disposal. Uncleaned packagings: Recommendation: Disposal must be made according to official regulations. USA –	Do not allow material to be released to the environment without proper governmental permits				
PBT: Not applicable. vPvB: 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. USA –	Avoid transfer into the environment.				
vPvB: 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. USA –	Results of PBT and vPvB assessmer	nt			
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. - USA	vPvB: Not applicable.				
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. USA —	Other adverse effects No further relev	vant information available.			
Recommendation Consult state, local or national regulations to ensure proper disposal. Uncleaned packagings: Recommendation: Disposal must be made according to official regulations. USA —	13 Disposal considerations				
Uncleaned packagings: Recommendation: Disposal must be made according to official regulations.	Waste treatment methods				
Recommendation: Disposal must be made according to official regulations.	Uncleaned packagings:				
(Contd. on page 4)	Recommendation: Disposal must be r	nade according to official regulations.			
			(Contd. on page 4)		

Product name: Ruthenium(III) 2,4-pentanedionate

(Contd. of page 3)

	(Contd. of page 3
4 Transport information	
UN-Number	
DOT, ADN, IMDG, IATA	Not applicable
UN proper shipping name	Natarrianha
DOT, ADN, IMDG, IATA	Not applicable
Transport hazard class(es)	
DOT, ADR, ADN, IMDG, IATA Class	Not applicable
Packing group DOT, IMDG, IATA	Not applicable
Environmental hazards:	Not applicable.
Special precautions for user	Not applicable.
Transport in bulk according to Annex II of MARPOL73/78 and the IBC	Code Not applicable.
Transport/Additional information:	
DOT	
Marine Pollutant (DOT):	No
UN "Model Regulation":	-
15 Regulatory information	
Safety, health and environmental regulations/legislation specific for t GHS label elements The product is classified and labeled in accordance w Hazard pictograms	the substance or mixture with 29 CFR 1910 (OSHA HCS)
GHS07	
Signal word Warning Hazard statements	
H315 Causes skin irritation.	
H319 Causes serious eye irritation. H335 May cause respiratory irritation.	
H335 May cause respiratory irritation. Precautionary statements	
P261 Avoid breathing dust/fume/gas/mist/vapours/spray. P280 Wear protective gloves/protective clothing/eye protectio	on/face protection
P300 Wear protective gioves/protective cioning/eye protective P305+P351+P381 F IN EYES: Rinse cautiously with water for several mir P304+P340 IF INHALED: Remove victim to fresh air and keep at re P362 Take off contaminated clothing and wash before reuse.	nutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P304+P340 IF INHALED: Remove victim to fresh air and keep at re P362 Take off contaminated clothing and wash before reuse	est in a position comfortable for breathing.
P371 Specific treatment (see on this label)	•
P332+P313 If skin irritation occurs: Get medical advice/attention. P405 Store locked up.	
P403+P233 Store in a well-ventilated place. Keep container tightly of	closed.
P501 Dispose of contents/container in accordance with local/ National regulations	/regional/national/international regulations.
All components of this product are listed in the U.S. Environmental Protect	tion Agency Toxic Substances Control Act Chemical substance Inventory.
All components of this product are listed on the Canadian Domestic Substance is not listings).	tances List (DSL).
SARA Section 313 (specific toxic chemical listings) Substance is not li California Proposition 65	3150.
<b>Prop 65 - Chemicals known to cause cancer</b> Substance is not listed	
Prop 65 - Developmental toxicity Substance is not listed. Prop 65 - Developmental toxicity, female Substance is not listed. Prop 65 - Developmental toxicity, male Substance is not listed.	
Prop 65 - Developmental toxicity, male Substance is not listed.	d facility data a fa
Information about limitation of use: For use only by technically qualified Other regulations, limitations and prohibitive regulations	a individuals.
Substance of Very High Concern (SVHC) according to the REACH Re	egulations (EC) No. 1907/2006. Substance is not listed. of the Regulation (EC) No 1907/2006 (REACH) for the manufacturing, placing on the
The conditions of restrictions according to Article 67 and Annex XVII market and use must be observed.	of the Regulation (EC) No 1907/2006 (REACH) for the manufacturing, placing on the
Substance is not listed	
Annex XIV of the REACH Regulations (requiring Authorisation for use Chemical safety assessment: A Chemical Safety Assessment has not be	e) Substance is not listed.
Chemical Salety assessment. A Chemical Salety Assessment has not be	een canned out.
16 Other information	
Employers should use this information only as a supplement to other inform	mation gathered by them, and should make independent judgement of suitability of this loyees. This information is furnished without warranty, and any use of the product not in
Department issuing SDS: Global Marketing Department	
Date of preparation / last revision 01/16/2017 / -	
Date of preparation / last revision 01/16/2017 / - Abbreviations and acronyms: ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agre	eement concerning the International Carriage of Dangerous Goods by Road)
Date of preparation / last revision 01/16/2017 / - Abbreviations and acronyms: ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agre DOT: US Department of Transportation EINECS: European Inventory of Existing Commercial Chemical Substances	eement concerning the International Carriage of Dangerous Goods by Road)
Date of preparation / last revision 01/16/2017 / - Abbreviations and acronyms: ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agre DOT: US Department of Transportation EINECS: European Inventory of Existing Commercial Chemical Substances CAS: Chemical Abstracts Service (division of the American Chemical Society) HMIS: Hazardous Materials Identification System (USA)	eement concerning the International Carriage of Dangerous Goods by Road)
Date of preparation / last revision 01/16/2017 / -     Abbreviations and acronyms:     ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agre     DOT: US Department of Transportation     EINECS: European Inventory of Existing Commercial Chemical Substances     CAS: Chemical Abstracts Service (division of the American Chemical Society)     HMIS: Hazardous Materials Identification System (USA)     WHMIS: Workplace Hazardous Materials Information System (Canada)     LC50: Lethal concentration, 50 percent	eement concerning the International Carriage of Dangerous Goods by Road)
Date of preparation / last revision 01/16/2017 / - Abbreviations and acronyms: ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agre DOT: US Department of Transportation EINECS: European Inventory of Existing Commercial Chemical Substances CAS: Chemical Abstracts Service (division of the American Chemical Society) HMIS: Hazardous Materials Identification System (USA) WHMIS: Workplace Hazardous Materials Information System (Canada) LC50: Lethal concentration, 50 percent LD50: Lethal close, 50 percent VPVB: very Persistent and very Bioaccumulative	eement concerning the International Carriage of Dangerous Goods by Road)
Date of preparation / last revision 01/16/2017 / - Abbreviations and acronyms: ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agre DOT: US Department of Transportation EINECS: European Inventory of Existing Commercial Chemical Substances CAS: Chemical Abstracts Service (division of the American Chemical Society) HMIS: Hazardous Materials Identification System (USA) WHMIS: Workplace Hazardous Materials Information System (Canada) LC50: Lethal concentration, 50 percent LD50: Lethal close, 50 percent VPVB: very Persistent and very Bioaccumulative ACGIH: American Conference of Governmental Industrial Hygienists (USA) OSHA: Orcupational Safety and Health Administration (USA)	eement concerning the International Carriage of Dangerous Goods by Road)
Date of preparation / last revision 01/16/2017 / - Abbreviations and acronyms: ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agre DOT: US Department of Transportation EINE-CS: European Inventory of Existing Commercial Chemical Substances CAS: Chemical Abstracts Service (division of the American Chemical Society) HMIS: Hazardous Materials Identification System (USA) WHMIS: Workplace Hazardous Materials Information System (Canada) LC50: Lethal concentration, 50 percent LD50: Lethal concentration, 50 percent VPVB: very Persistent and very Bioaccumulative ACGIH: American Conference of Governmental Industrial Hygienists (USA) OSHA: Occupational Safety and Health Administration (USA) NTP: National Toxicology Program (USA) MARC: International Agrency for Research on Cancer	eement concerning the International Carriage of Dangerous Goods by Road)
Date of preparation / last revision 01/16/2017 / - Abbreviations and acronyms: ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agre DOT: US Department of Transportation EINE-CS: European Inventory of Existing Commercial Chemical Substances CAS: Chemical Abstracts Service (division of the American Chemical Society) HMIS: Hazardous Materials Identification System (USA) WHMIS: Workplace Hazardous Materials Information System (Canada) LC50: Lethal concentration, 50 percent US50: Lethal concentration, 50 percent VPVB: very Persistent and very Bioaccumulative ACGIH: American Conference of Governmental Industrial Hygienists (USA) OSHA: Occupational Safety and Health Administration (USA) NTP: National Toxicology Program (USA) IARC: International Agency for Research on Cancer EFA: Environmental Protection Agency (USA) Stin Irrit 2: Stin consonportingtion, Hazard Catercory 2	eement concerning the International Carriage of Dangerous Goods by Road)
Conformance with this Safety Data Sneet, or in combination with any other Department issuing SDS: Global Marketing Department Date of preparation / last revision 01/16/2017 / - Abbreviations and acronyms: ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agre DOT: US Department of Transport des marchandises dangereuses par Route (European Agre DOT: US Department of Transport des marchandises dangereuses par Route (European Agre DOT: US Department of Transport des marchandises dangereuses par Route (European Agre DOT: US Department of Transport des marchandises dangereuses par Route (European Agre DOT: US Department of Transportation EINECS: European Inventory of Existing Commercial Chemical Substances CAS: Chemical Abstracts Service (division of the American Chemical Society) HMIS: Hazardous Materials Identification System (USA) WHMIS: Workplace Hazardous Materials Information System (Canada) LC50: Lethal concentration, 50 percent UPDS: very Persistent and very Bioaccumulative ACGIH: American Conference of Governmental Industrial Hygienists (USA) OSHA: Occupational Safety and Health Administration (USA) MTP: National Toxicology Program (USA) IARC: International Agency for Research on Cancer EPA: Environmental Protection Agency (USA) Skin Int: 2: Skin corosion/irritation, Hazard Category 2 Eye Inti. 2: Skin corosion/irritation, Hazard Category 2 Eye Inti. 2: Specific target organ toxicity - Single exposure, Hazard Category 3	eement concerning the International Carriage of Dangerous Goods by Road)