	Safety Data Sheet	Page 1/3
Printing date 11.08.2010	Safety Data Sheet according to 1907/2006/EC, Article 31	Revision: 11.08.2010
1 Identification of substance		NGVISION. 11.00.2010
Product details		
Trade name	2-Cyclopentene-1-acetic acid	
Stock number: Manufacturer/Supplier:	H27507 Alfa Aesar GmbH & Co.KG	
Manuracturen/Supplier.	Benzstrasse 3 D-76185 Karlsruhe / Germany	E-mail: gcat@matthey.com www.alfa-chemcat.com
Informing department:	Product safety department.	www.ana-onomou.com
Emergency information:	Giftnotruf Universität Mainz / Poison Information Center Mainz www.giftinfo.uni-mainz.de Telefon:+49(0)6131/19240	
2 Hazards identification		
Hazard designation:	Xi Irritant	
Information portaining to particular dangers		
Information pertaining to particular dangers for man and environment GHS label elements	R 36/37/38 Irritating to eyes, respiratory system and skin.	
GH5 label elements	Varning	/
	H315 - Causes skin irritation.	/
	H319 - Causes serious eye irritation. H335 - May cause respiratory irritation.	
Prevention: Response:	P280 Wear protective gloves. P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remo	ove contact lenses, if present
	and easy to do. Continue rinsing.	!
3 Composition/information on ingredients Chemical characterization:	5	
Designation: (CAS#) Identification number(s):	2-Cyclopentene-1-acetic acid (CAS# 13668-61-6)	
EINECS Number:	237-146-1	
4 First aid measures		
After inhalation	Supply fresh air. If required, provide artificial respiration. Keep patient warm. Consult of Seek immediate medical advice.	doctor if symptoms persist.
After skin contact	Instantly wash with water and soap and rinse thoroughly. Seek immediate medical advice.	
After eye contact After swallowing	Rinse opened eye for several minutes under running water. Then consult doctor. Seek immediate medical advice.	
5 Fire fighting measures		
Suitable extinguishing agents	CO2, extinguishing powder or water jet. Fight larger fires with water jet or alcohol-resist	stant foam.
Special hazards caused by the material, its products of combustion or flue gases:	Can be released in case of fire:	
Protective equipment:	Carbon monoxide and carbon dioxide Wear self-contained breathing apparatus.	
	Wear full protective suit.	I
6 Accidental release measures Person-related safety precautions:	Wear protective equipment. Keep unprotected persons away.	
	Ensure adaguate ventilation	normite
Measures for cleaning/collecting:	Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, s	sawdust).
Additional information:	Do not allow material to be released to the environment without proper governmental Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, since adequate ventilation. See Section 7 for information on safe handling See section 8 for information on personal protection equipment. See Section 13 for information on disposal.	
	See Section 13 for information on disposal.	
7 Handling and storage		
Handling Information for safe handling:	Keep containers tightly sealed.	
-	Store in cool, dry place in tightly closed containers. Ensure good ventilation/exhaustion at the workplace.	
Information about protection against explosions and fires:	Keep ignition sources away - Do not smoke.	
Storage Requirements to be met by storerooms and		
containers: Information about storage in one common	No special requirements.	
storage facility:	Store away from oxidizing agents. Store away from strong bases.	
Further information about storage conditions:	Keep container tightly sealed.	
	Store in cool, dry conditions in well sealed containers.	
8 Exposure controls and personal protect	tion	
Additional information about design of technical systems:	Properly operating chemical fume hood designed for hazardous chemicals and having	g an average face velocity of at
Components with critical values that require	least 100 feet per minute.	
monitoring at the workplace: Additional information:	Not required. No data	
Personal protective equipment		
General protective and hygienic measures	The usual precautionary measures should be adhered to in handling the chemicals.	(Contd. on page 2)
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ade name 2-Cyclopentene-1-acedic acid Conti. I per tension of the open any solid and infregranted gameses. Presenting explorment: December of the open and solid and infregranted gameses. Presenting of periods and information. Pr	11111119 Uale 11.06.2010	Revision. 11.06.20
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Breathing equipment: Waterial of gloves Protection: Pr		Avoid contact with the eyes and skin.
Material of gloves         The selection of the subble gloves does not only depend on the material, but also on further marks of quality an important on manufacture.           Penetration time of glove material properties:         Selection of the subble gloves does not only depend on the material, but also on further marks of quality an important on manufacture.           Portset and an chemical properties:         Penetration time of glove material properties:           General Information         Free protection:           Portset and an chemical properties:         Colouriess           General Information         Colouriess           Smell:         Colouriess           Smell:         Readow           Protection of the subble gloves does not only depend on the material, but also on further marks of quality an important of the material point on the point point on the mat	Breathing equipment:	Use breathing protection with high concentrations
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Water:         Slightly soluble           0 Stability and reactivity           Thormal decomposition / conditions to be Materials to be avoided:         No decomposition if used and stored according to specifications. Oxidizing agents Bases           Dangerous reactions:         No decomposition if used and stored according to specifications. Oxidizing agents           Dangerous reactions:         No decomposition if used and stored according to specifications. Oxidizing agents           Dangerous reactions:         No dangerous reactions known           Carbon monoxide and carbon dioxide         Information           Acute toxicity: Primary irritant effect:         Irritant for skin and mucous membranes. On the skin:           On the skin:         Irritant for skin and mucous membranes. No destification data on carcinogenic properties of this material is available from the EPA, IARC, NTP, OSHA o ACGIH.           2 Ecological information:         Kater hazard class 1 (Self-assessment): slightly hazardous for water. Do not allow material to be released to the environment without proper governmental permits.           3 Disposal considerations Product:         Hand over to disposers of hazardous waste. Nue to especially treated unders adherence to official regulations. Corout tiset, focal or national regulations for proper disposal. Uncleased packagings: Recommendation.           4 Transport Information:         More Material to a mational regulations. No e           Additine transport InfOrMation.         None           Martine poiltAction		1.047 g/cm <sup>3</sup>
Thermal decomposition / conditions to be avoided:       No decomposition if used and stored according to specifications.         Dangerous reactions:       Do decomposition if used and stored according to specifications.         Dangerous reactions:       No dangerous reactions.         Dangerous products of decomposition:       No dangerous reactions known         Carbon monoxide and carbon dioxide       Carbon monoxide and carbon dioxide         1 Toxicological information       Carbon monoxide and carbon dioxide         Acute toxicity:       Irritant fefect:         on the skin:       Irritant effect.         On the skin:       Irritant effect.         On the skin:       Irritant effect.         You and the skin:       To the besting our knowledge the acute and chronic toxicity of this substance is not fully known.         Additional toxicological information:       AccIH.         2 Ecological information:       Gassification data on carcinogenic properties of its or teach ground water, water bodies or sewage system.         Do not allow unditude product of allow unditude product of the environment without proper governmental permits.       3 Disposal considerations         Product:       Hand over to disposers of hazardous waste.         Muchaend packagings:       Disposal must be made according to official regulations.         Consult state, local or national regulations for proper disposal.       Disposal </td <td>Solubility in / Miscibility with Water:</td> <td>Slightly soluble</td>	Solubility in / Miscibility with Water:	Slightly soluble
Acute toxicity:       Irritant effect:         on the skin:       Irritant effect:         Sensitization:       No sensitizing effect known.         Additional toxicological information:       To the best of our knowledge the acute and chronic toxicity of this substance is not fully known.         No classification data on carcinogenic properties of this material is available from the EPA, IARC, NTP, OSHA o         Additional ecological information:       Water hazard class 1 (Self-assessment): slightly hazardous for water.         Beneral notes:       Water hazard class 1 (Self-assessment): slightly hazardous for water.         Do not allow undiluted product or large quantities of it to reach ground water, water bodies or sewage system.         Do not allow undiluted product or large quantities of it to reach ground water, water bodies or sewage system.         Do not allow undiluted product or large quantities of it to reach ground water, water bodies or sewage system.         Do not allow undiluted product or large quantities of it to reach ground water, water bodies or sewage system.         Do not allow undiluted product or large quantities of it to reach ground water, water bodies or sewage system.         Do not allow undiluted product or large quantities of it to reach ground water.         Recommendation       Hand over to disposers of hazardous waste.         Recommendation       Land over to dispose a must be made according to official regulations.         Consult state, local or national regulations for proper dispo	avoided: Materials to be avoided: Dangerous reactions:	Oxidizing agents Bases No dangerous reactions known
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on the skin: Sensitization: Additional toxicological information: Additional ecological information: Additional ecological information: Ceneral notes: 3 Disposal considerations Product: Recommendation: 4 Transport Information: Disposal must be made according to official regulations. Consult state, local or national regulations. Consult state, local or national regulations. Additional ecological: 9 Disposal must be made according to official regulations. Consult state, local or national regulations. 4 Transport Information: Capital transport IMDG/GGVSea: IMDG/GGVSea Class: None Marine pollutant: None Transport/Additional information: None Transport/Additional information: None Not dangerous according to the above specifications. None Non	Primary irritant effect:	· · · · · · · · · · · · · · · · · · ·
Sensitization:       No sensitizing effect known.         Additional toxicological information:       To the best of our knowledge the acute and chronic toxicity of this substance is not fully known.         No classification data on carcinogenic properties of this material is available from the EPA, IARC, NTP, OSHA o ACGIH.         2 Ecological information:       Additional ecological information:         General notes:       Water hazard class 1 (Self-assessment): slightly hazardous for water.         Do not allow undiluted product or large quantities of it to reach ground water, water bodies or sewage system.         Do not allow undiluted product or large quantities of it to reach ground water, water bodies or sewage system.         Do not allow undiluted product or large quantities of it to reach ground water, water bodies or sewage system.         Do not allow undiluted product or large quantities of it to reach ground water, water bodies or sewage system.         Do not allow undiluted product or large quantities of it to reach ground water, water bodies or sewage system.         Do not allow undiluted product or large quantities of it to reach ground water, water bodies or sewage system.         Do not allow undiluted product or large quantities of it to reach ground water, water bodies or sewage system.         Do not allow undiluted product or large quantities of it to reach ground water, water bodies or sewage system.         Do not allow undiluted product or large quantities of it to reach ground water, must be specially treated under adherence to official regulations. <td< td=""><td>on the skin:</td><td></td></td<>	on the skin:	
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ACGIH.       ACGIH.         2 Ecological information:       Additional ecological information:         General notes:       Water hazard class 1 (Self-assessment): slightly hazardous for water.         Do not allow undiluted product or large quantities of it to reach ground water, water bodies or sewage system.         Do not allow material to be released to the environment without proper governmental permits.         33 Disposal considerations         Product:         Recommendation       Hand over to disposers of hazardous waste.         Must be specially treated under adherence to official regulations.         Consult state, local or national regulations for proper disposal.         Uncleaned packagings:         Recommendation:         Disposal must be made according to official regulations.         4 Transport information         Land transport MDG/GGVSea:         MDG/GVSte2 Class:       None         Marine pollutant:       No         Air transport IACO-TI and IATA-DGR:       None         Transport/Additional information:       Not dangerous according to the above specifications.	Additional toxicological information:	To the best of our knowledge the acute and chronic toxicity of this substance is not fully known.
Additional ecological information:       Water hazard class 1 (Self-assessment): slightly hazardous for water. Do not allow undiluted product or large quantities of it to reach ground water, water bodies or sewage system. Do not allow material to be released to the environment without proper governmental permits.         3 Disposal considerations       Product: Recommendation         Product: Recommendation:       Hand over to disposers of hazardous waste. Must be specially treated under adherence to official regulations. Consult state, local or national regulations for proper disposal.         Uncleaned packagings: Recommendation:       Disposal must be made according to official regulations.         4 Transport information       Land transport ADR/RID and GGVS/GGVE (cross-border/domestic) ADR/RID-GGVS/E Class:         Maritime transport IMDG/GGVSea: Marine pollutant:       None None         Air transport ICAO-TI and IATA-DGR: ICAO/ITA Class:       None         Transport/Additional information:       Not dangerous according to the above specifications.		
General notes:       Water hazard class 1 (Self-assessment): slightly hazardous for water. Do not allow undiluted product or large quantities of it to reach ground water, water bodies or sewage system. Do not allow material to be released to the environment without proper governmental permits.         3 Disposal considerations Product: Recommendation       Hand over to disposers of hazardous waste. Must be specially treated under adherence to official regulations. Consult state, local or national regulations for proper disposal.         Uncleaned packagings: Recommendation:       Disposal must be made according to official regulations.         4 Transport information       Land transport ADR/RID and GGVS/GGVE (cross-border/domestic) ADR/RID-GGVS/E Class:         Maritime transport IMDG/GGVSea: IMDG/GGVSea Class:       None         Maritime transport ICAO-TI and IATA-DGR: ICAO/IATA Class:       None         Transport/Additional information:       Not dangerous according to the above specifications.	•	
Do not allow undiluted product or large quantities of it to reach ground water, water bodies or sewage system. Do not allow material to be released to the environment without proper governmental permits.         3 Disposal considerations         Product: Recommendation       Hand over to disposers of hazardous waste. Must be specially treated under adherence to official regulations. Consult state, local or national regulations for proper disposal.         Uncleaned packagings: Recommendation:       Disposal must be made according to official regulations.         4 Transport information       Land transport ADR/RID and GGVS/GGVE (cross-border/domestic) ADR/RID-GGVS/E Class: None         Maritime transport IMDG/GGVSea: IMDG/GGVSea Class:       None         Maritine pollutant:       None         Air transport ICAO-TI and IATA-DGR: ICAO/IATA Class:       None         Transport/Additional information:       Not dangerous according to the above specifications.		Water based class 1 (Salf accessment): clightly basardous for water
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Product:       Hand over to disposers of hazardous waste.         Must be specially treated under adherence to official regulations.       Consult state, local or national regulations for proper disposal.         Uncleaned packagings:       Disposal must be made according to official regulations.         # Transport information       Disposal must be made according to official regulations.         # Transport ADR/RID and GGVS/GGVE (cross-border/domestic)       None         Maritime transport IMDG/GGVSea:       None         IMDG/GGVSea Class:       None         Maritime transport ICAO-TI and IATA-DGR:       None         ICAO/IATA Class:       None         Transport/Additional information:       Not dangerous according to the above specifications.		Do not allow material to be released to the environment without proper governmental permits.
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Uncleaned packagings: Recommendation:       Disposal must be made according to official regulations.         4 Transport information       Image: Constraint of the second s	Recommendation	Hand over to disposers of hazardous waste. Must be specially treated under adherence to official regulations.
Recommendation:       Disposal must be made according to official regulations.         4 Transport information       Image: Constraint of the second se	Uncleaned neckagings	CONSUL State, local of frational regulations for proper disposal.
Land transport ADR/RID and GGVS/GGVE (cross-border/domestic) ADR/RID-GGVS/E Class:       None         Maritime transport IMDG/GGVSea: IMDG/GGVSea Class:       None         Marine pollutant:       No         Air transport ICAO-TI and IATA-DGR: ICAO/IATA Class:       None         Transport/Additional information:       Not dangerous according to the above specifications.	Recommendation:	Disposal must be made according to official regulations.
ADR/RID-GGVS/E Class:       None         Maritime transport IMDG/GGVSea:       None         IMDG/GGVSea Class:       None         Marine pollutant:       No         Air transport ICAO-TI and IATA-DGR:       None         ICAO/IATA Class:       None         Transport/Additional information:       Not dangerous according to the above specifications.		
Maritime transport IMDG/GGVSea: IMDG/GGVSea Class:       None No         Marine pollutant:       No         Air transport ICAO-TI and IATA-DGR: ICAO/IATA Class:       None         Transport/Additional information:       Not dangerous according to the above specifications.	Land transport ADR/RID and GGVS/GGVE (c	ross-border/domestic)
IMDG/GGVSea Class:       None         Marine pollutant:       No         Air transport ICAO-TI and IATA-DGR:       None         ICAO/IATA Class:       None         Transport/Additional information:       Not dangerous according to the above specifications.		
Air transport ICAO-TI and IATA-DGR:       None         ICAO/IATA Class:       None         Transport/Additional information:       Not dangerous according to the above specifications.	IMDG/GGVSea Class:	
Transport/Additional information: Not dangerous according to the above specifications.	Marine pollutant:	
Transport/Additional information: Not dangerous according to the above specifications.	Air transport ICAO-TI and IATA-DGR:	
Transport/Additional information:         Not dangerous according to the above specifications.		
(Contd. on page		Not dangerous according to the above specifications

## Trade name 2-Cvclopentene-1-acetic acid

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		(Contd. of page
Regulatory information		
Designation according to EC guidelines:		
Code letter and hazard designation of product:	Xi Irritant	
Risk phrases:	36/37/38 Irritating to eyes, respiratory system and skin.	
Safety phrases:	26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. 37 Wear suitable gloves.	
National regulations		
Information about limitation of use:	For use only by technically qualified individuals. Employment restrictions concerning young persons must be observed.	
Water hazard class:	Water hazard class 1 (Self-assessment): slightly hazardous for water.	

Department issuing data specification sheet: Health, Safety and Environmental Department. Contact: Abbreviations and acronyms: Department issuing data specification sheet: Health, Safety and Environmental Department. Zachariah Holt ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Raid) IMDG: International Maritime Code for Dangerous Goods IATA-DGR: Dangerous Goods Regulations by the "International Air Transport Association" IATA-DGR: Dangerous Goods By tail) IMDC: International Instructions by the "International Civil Aviation Organization" ICAO-TI: Technical Instructions by the "International Civil Aviation Organization" ICAO-TI: Technical Instructions by the "International Civil Aviation Organization" ICAO-TI: Technical Instructions by the "International Civil Aviation Organization" ICAO-TI: Technical Instructions by the "International Civil Aviation Organization" ICAO-TI: Technical Abstracts Service (division of the American Chemical Society)

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