



1 I dentification Product iame: 1-Anino-4-oxocyclohexanecarboxylic acidethylene ketal Product iame: 1-Anino-4-oxocyclohexanecarboxylic acidethylene ketal Stock number: 1-9786 GAS Number: Product iame: 1-9786 GAS Number: 1-		New Press	veu 0/1 10/02/2008
Product name: 1-Amino-4-oxocyclohexanecarboxylic acidethylene ketal Stock number: 119780 Cut Shumber: Cut Sh	1		
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Water Hall, MA 01835-80090         Tex: 50:0-2-0-070         Enail: Icol Balla.com         Water Balla.com         Water Balla.com         Water Balla.com         Tex: 50:0-2-070         Enail: Icol Balla.com         Water Balla.com         Water Balla.com         Provide Status         Characterization         Characterizat		Alfa Aesar	
Tel: 000-343-0600 Tel: 000-340 Tel: 000-340		30 Bond Street Ward Hill MA 01835-8099	
Email: tech Balfa.com ymedia.com		Tel: 800-343-0660	
Information Department: Health, Safety and Environmental Department Emergency Weightone number: Department: Health, Safety and Environmental Department Emergency Weightone number: Department: Health, Safety and Environmental Department Experiment: Health, Safety and Environmental Department Classification of the substance or mitrure in accordance with 29 CFR 1910 (OSHA HCS) The substance is not classified according to the Globably Hamonized System (GHS). Hazard's not otherwise classified to information known. Label elements GHS label elements Not applicable Signal work in applicable WHINE classification Not conclude WHINE classification Not conclude WHINE classification Not applicable WHINE classification Not conclude WHINE classification Not applicable WHINE classification Not conclude WHINE classification Not applicable WHINE classification Not app		Email: tech@alfa.com	
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Hazard statements Not applicable         WHMS Classification Not controlled         Childs Intifugs [scale 0-4]         [Hazardous Materials Identification System)         Image: Classification Not controlled         Image: Classification Not controlle		GHS label elements Not applicable	
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Other hazards         Results of PBT and vPVB assessment         PBT: Not applicable.         3 Composition/information on ingredients         Chemical characterization: Substances         CAS# Description:         S462:1-18:01-Xnnino-4-oxocyclohexanecarboxylic acidethylene ketal         4 First-aid measures         Description of first aid measures         After inhalation         Supply Iresh air. If required, provide artificial respiration. Keep patient warm.         Seek inmediate medical advice.         After skin contact         Immediately wash with atter and soap and rinse thoroughly.         After eve contact fines opened eve for several minutes under running water. Then consult a doctor.         After eve contact fines opened eve for several minutes under running water. Then consult a doctor.         After eve contact fines opened eve for several minutes under running water. Then consult a doctor.         After eve contact fines opened eve for several minutes under running water. Then consult a doctor.         Marter and several medical treatment.         Information of any immediate medical attention and special treatment needed No further relevant information available.         Indication of any immediate medical attention and special treatment needed No further relevant information available.         Stribule extinguishing agents Carbon dioxide, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resi		Fire 1 Flammability = 1	
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Personal precautions, protective equipment and emergency procedures		Wear self-contained respirator.	
Personal precautions, protective equipment and emergency procedures	e	S Accidental release measures	
		Personal precautions, protective equipment and emergency procedures	
Ensure adequate ventilation		Wear protective equipment. Keep unprotected persons away. Ensure adequate ventilation Environmental preservicing to be released to the environment without preservicemental permits	
Environmental precautions: Do not allow material to be released to the environment without proper governmental permits. Methods and material for containment and cleaning up: Pick up mechanically. Provention of cocondary bacadar No aposis manager a required.		Methods and material for containment and cleaning up: Pick up mechanically.	
Prevention of secondary hazards: No special measure's required. Reference to other sections Section 2 for information on sets handling		Reference to other sections	
		See Section 7 for information on safe handling See Section 8 for information on personal protection equipment.	(Contd on page 2)
See Section 8 for information on personal protection equipment.			USA
Reference to other sections		Reference to other sections See Section 7 for information on safe handling	
See Section 7 for information on sale nandling See Section 8 for information on personal protection equipment.			(Contd. on page 2) USA
See Section 8 for information on personal protection equipment.			

## Product name: 1-Amino-4-oxocyclohexanecarboxylic acidethylene ketal

(Contd. of page 1)

See Section	13 for	dianasa	linformation
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See Section 13 for disposal information.		(Contd. of page 1)				
7 Handling and storage						
Handling Precautions for safe handling Keep container tightly sealed. Store in cool, dry place in tightly closed of Information about protection against Conditions for safe storage, including Storage Requirements to be met by storeroom Information about storage in one com Further information about storage con Keep container tightly sealed. Store in cool, dry conditions in well seale	explosions and fires: No information known. g any incompatibilities ns and receptacles: No special requirements. nmon storage facility: Store away from oxidizing agents. anditions: led containers.					
Specific end use(s) No further relevant						
8 Exposure controls/personal prote Additional information about design of Properly operating chemical fume hood						
Control parameters Components with limit values that rec Additional information: No data	quire monitoring at the workplace: Not required.					
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 soiled and contaminated clothing immediately. Wash hands before breaks and at the end of work. Maintain an ergonomically appropriate working environment. Breathing equipment: Use suitable respirator when high concentrations are present. Protection of hands: Impervious gloves 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. Penetration time of glove material (in minutes) Not determined Eye protection: Safety glasses						
Body protection: Protective work clothi 9 Physical and chemical properties	-					
Information on basic physical and che General Information Appearance: Form:						
Color: Odor:	White Not determined					
Odor threshold:	Not determined.					
pH-value:	Not applicable.					
Change in condition Melting point/Melting range: Boiling point/Boiling range: Sublimation temperature / start:	301-304 °C (574-579 °F) Not determined Not determined					
Flash point: Flammability (solid, gaseous) Ignition temperature: Decomposition temperature: Auto igniting:	Not applicable Not determined Not determined Not determined Not determined.					
Danger of explosion: Explosion limits: Lower: Upper: Vapor pressure:	Product does not present an explosion hazard. Not determined Not determined Not applicable.					
Density: Density: Relative density Vapor density Evaporation rate Solubility in / Miscibility with	Not determined Not determined Not applicable. Not applicable.					
Water: Insoluble Partition coefficient (n-octanol/water): Not determined. Viscosity:						
dynamic: kinematic: Other information	Not applicable. Not applicable. No further relevant information available.					
10 Stability and reactivity Reactivity No information known. Chemical stability Stable under recommon Thermal decomposition / conditions to Possibility of hazardous reactions No Conditions to avoid No further relevant	to be avoided: Decomposition will not occur if used and stored according to specifications.					

rossibility of hazardous reactions No dangerous reactions k Conditions to avoid No further relevant information available. Incompatible materials: Oxidizing agents Hazardous decomposition products: Carbon monoxide and carbon dioxide Nitrogen oxides

# Product name: 1-Amino-4-oxocyclohexanecarboxylic acidethylene ketal

		(Contd. of page 2)			
11 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: May cause irritation Eye irritation or corrosion: May cause irritation					
Sensitization: No sensitizing effects known. Germ cell mutagenicity: No effects known.					
Germ cell mutagenicity: No effects known. Carcinogenicity: No classification data on carcinogenic properties of this mate	erial is available from the EPA, IARC, NTP, OSHA or ACGIH.				
Reproductive toxicity: No effects known. Specific target organ system toxicity - repeated exposure: No effects know					
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	e 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.					
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 governation Avoid transfer into the environment.	mental permits.				
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 prope.	r disposal				
Uncleaned packagings: Recommendation: Disposal must be made according to official regulations.					
14 Transport information Not a hazardous material for transportation.					
UN-Number DOT, IMDG, IATA	None				
UN proper shipping name DOT, IMDG, IATA	None				
Transport hazard class(es)					
DOT, ADR, IMDG, IATA Class	None				
Packing group	None				
DOT, IMĎG, IÀTA	None				
Environmental hazards:	Not applicable.				
Special precautions for user Transport in bulk according to Annex II of MARPOL73/78 and the IBC Cod	Not applicable. de Not applicable				
Transport in Bank according to Annex in or MARK OLTS TO and the 120 Oct	Not dangerous according to the above specifications.				
DOT Morine Pollutent (DOT):					
Marine Pollutant (DOT):	No				
15 Regulatory information					
Safety, health and environmental regulations/legislation specific for the substance or mixture					
GHS label elements Not applicable Hazard pictograms Not applicable					
Signal word Not applicable Hazard statements Not applicable					
National regulations This product is not listed in the U.S. Environmental Protection Agency Toxic Substances Control Act Chemical Substance Inventory. Use of this product is restricted					
to research and development only. This product must be used by or directly under the supervision of a technically qualified individual as defined by TSCA. This product must not be used for commercial purposes or in formulations for commercial purposes.					
SARA Section 313 (specific toxic chemical listings) Substance is not listed.					
California Proposition 65 Prop 65 - Chemicals known to cause cancer Substance is not listed.					
Prop 65 - Developmental toxicity Substance is not listed. Prop 65 - Developmental toxicity, female Substance is not listed.					
Prop GS - Developmental toxicity, reflate Substance is not listed. Prop GS - Developmental toxicity, male Substance is not listed. Information about limitation of use: For use only by technically qualified individuals.					
Other regulations, limitations and prohibitive regulations					
Substance of Very High Concern (SVHC) according to the REACH Regula The conditions of restrictions according to Article 67 and Annex XVII of the the conditions of the structure of the second secon	ntions (EC) No. 1907/2006. Substance is not listed. he Regulation (EC) No 1907/2006 (REACH) for the manufacturing	, placing on the			
market and use must be observed. Substance is not listed.					
Annex XIV of the REACH Regulations (requiring Authorisation for use) Su Chemical safety assessment: A Chemical Safety Assessment has not been	ubstance is not listed. carried out				
		(Contd. on page 4)			

(Contd. on page 4)

### Product name: 1-Amino-4-oxocyclohexanecarboxylic acidethylene ketal

(Contd. of page 3)

#### 16 Other information

Employers should use this information only as a supplement to other information gathered by them, and should make independent judgement of suitability of this information to ensure proper use and protect the health and safety of employees. This information is furnished without warranty, and any use of the product not in conformance with this Material Safety Data Sheet, or in combination with any other product or process, is the responsibility of the user. conformance with this Material Safety Data Sheet, or in combination with any other product or process, is the responsibility of the user.

Department issuing SDS: Global Marketing Department
Date of preparation / last revision 11/24/2015 / Abbreviations and acronyms:

ID: Réglement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)
IATA-DGR: Dangerous Goods Regulations by the "International Air Transport Association" (IATA)
ICAO: International Civil Aviation Organization
ICAO: Ti: Technical Instructions by the "International Civil Aviation Organization" (ICAO)
IMDG: International Civil Aviation of the American Chemical Society)
HMIS: Hazardous Materials Information System (ISA)
WHIMIS: Workplace Hazardous Materials Information System (Canada)
LC50: Lethal dose, 50 percent
VPWs very Persistent and very Bioaccumulative
ACGIH: American Chernental Industrial Hygienists (USA)
OSHA: Occupational Safety and Health Administration (USA)
IMTP: National Toxicology Program (USA)
IATE: International Air and the Administration (USA)
IATE: International Agency for Research on Cancer
EPA: Environmental Protection Agency (USA)

USA