

Safety Data Sheet per OSHA HazCom 2012

1 Identification Product identifier Product name: 6-Chloro-9-(2-tetrahydropyranyl)purine Stock number: H63779 CAS Number: 7306-68-5 EC number: 230-757-4 Relevant identified uses of the substance or mixture and uses advised against. Identified use: SU24 Scientific research and development Details of the supplier of the safety data sheet Manufacturer/Supplier: Alfa Aesar Thermo Fisher Scientific Chemicals, Inc. Inerrito Fisher Scheman C. 30 Bond Street Ward Hill, MA 01835-8099 Tel: 800-343-0660 Fax: 800-322-4757 Email: tech @alfa.com www.alfa.com Information Department: Health, Safety and Environmental Department Emergency telephone number: During normal business hours (Monday-Friday, 8am-7pm EST), call (800) 343-0660. After normal business hours, call Carechem 24 at (866) 928-0789. 2 Hazard(s) identification Classification of the substance or mixture in accordance with 29 CFR 1910 (OSHA HCS) The substance is not classified according to the Globally Harmonized System (GHS). Hazards not otherwise classified No information known. I abel elements GHS label elements Not applicable Hazard pictograms Not applicable Signal word Not applicable Hazard statements Not applicable WHMIS classification Not controlled Classification system HMIS ratings (scale 0-4) (Hazardous Materials Identification System) Health (acute effects) = 1 Flammability = 1 Flammability = 1 Physical Hazard = 1 Other hazards Results of PBT and vPvB assessment PBT: Not applicable. vPvB: Not applicable. 3 Composition/information on ingredients Chemical characterization: Substances CAS# Description: 7306-68-5 6-Chloro-9-(tetrahydro-2H-pyran-2-yl)-9H-purine Identification number(s): EC number: 230-757-4 4 First-aid measures Description of first aid measures After inhalation Supply fresh air. If required, provide artificial respiration. Keep patient warm. Seek immediate medical advice. After skin contact Immediately wash with water and soap and rinse thoroughly. Seek immediate medical advice. After eye contact Rinse opened eye for several minutes under running water. Then consult a doctor. After swallowing Seek medical treatment. Information for doctor Most important symptoms and effects, both acute and delayed No further relevant information available. 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 Nitrogen oxides (NOx) Hydrogen chloride (HCI) Advice for firefighters Protective equipment: 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.

(Contd. on page 2)

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Methods and material for containmen Prevention of secondary hazards: No Reference to other sections	n <b>t and cleaning up:</b> Pick up mechanically. o special measures required.	(contai or page
See Section 7 for information on safe ha	andling	
See Section 8 for information on person See Section 13 for disposal information.		
Handling and storage		
Handling Precautions for safe handling		
Keep container tightly sealed. Store in cool, dry place in tightly closed	containers.	
Information about protection against Conditions for safe storage, including	explosions and fires: No information known.	
Storage	ns and receptacles: No special requirements.	
Information about storage in one con Further information about storage co	nmon storage facility: Store away from oxidizing agents.	
Keep container tightly sealed.		
Store in cool, dry conditions in well seal <b>Specific end use(s)</b> No further relevant	t information available.	
Exposure controls/personal prot		
Additional information about design of Properly operating chemical fume hood	of technical systems: I designed for hazardous chemicals and having an average face velocity of at least 100 feet per minute.	
Control parameters Components with limit values that red	guire monitoring at the workplace:	
The product does not contain any releva Additional information: No data	ant quantities of materials with critical values that have to be monitored at the workplace.	
Exposure controls Personal protective equipment		
General protective and hygienic measures for h	sures aandling chemicals should be followed	
Keep away from foodstuffs, beverages a Remove all soiled and contaminated clo	and feed.	
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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 strong oxidizing agents

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Heardows decomposition products: hydrogen chloride (HC)           If Oxcloop(alc) information           Information on texicological effects           Agents toxicity: No effects known:           Experiments           Cardinoparticle (Hormation on texicological effects           Agents toxicity: No effects known:           Cardinoparticle (Hormation of the outperformation of the outperform			(Conta. of page 2)
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Acute toxicity: No effects known.       Comparison of comparison in they cause initiation         EVE initiation or comparison: May cause initiation       Semistration of comparison: May cause initiation         Semistration or comparison: May cause initiation       Semistration of comparison: May cause initiation         Semistration: No sensitizing effects known.       Semistration of comparison: May cause initiation         Specific target organ system toxicity: repeated exposure: No effects known.       Semistration of comparison: No effects known.         Additional toxicological Information:       To the best of our knowledge the acute and chronic toxicity of this substance is not fully known.         212 Ecological Information:       Tokicity.       No effects known.         Additional toxicity: No effects known.       Additional toxicity: No effects known.         Additional cocklogical information available.       Persistence and degradability No further relevant information available.         Persistence aclogical information:       Comparison material to be relevant mormation available.         Additional ecological information:       Counse of exoticy.         Additional ecological information:       Counse of exoticy.         Contract notes:       Counse of exoticy.         So not allow material to be relevant information available.       Counse of exoticy.         Additional ecological information:       Counse of exoticy.         Additional e	-		
Shin irritation or corrosion: May cause irritation           Eye irritation or corrosion: May cause irritation           Germ cell mutagenicity: No effects known.           Carcinogenicity: No effects known.           Specific target organ system toxicity - self exposure: No effects known.           Specific target organ system toxicity - self exposure: No effects known.           Specific target organ system toxicity - self exposure: No effects known.           Additional toxicological information: To the basi of our knowledge the acute and chronic toxicity of this substance is not fully known.           Zecological information           Toricity           Aquastic toxicity: No fulles known.           Representation           Toricity           Aquastic toxicity: No further relevant information available.           Persistence and degradability No further relevant information available.           Reserved the policity of the environment without proper governmental permits.           Additional ecological information:           Beneral notes:           Do not allow material to be released to the environment without proper governmental permits.           Additional ecological information:           Beneral notes:           Do not allow material to be released to released to environment without proper governmental permits.           Additional ecological information:           Status of PBT and VPVB asse	cute toxicity: No effects known.		
Eye Initiation or corrosion: May Cause initiation           Granitization: No sensitizing effects known.           Granitization: Cokiestification data on carcinogenic properties of this material is available from the EPA, IARC, NTP, OSHA or ACGIH.           Reproductive Cokiest: No effects known.           Specific target organ system toxicity - repeated exposure. No effects known.           Subscure to chronic toxicity: No effects known.           Additional toxicological Information           Toxicity           Additional toxicological 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:           Do not allow undiked product or large quantities to reach ground water, water course or sewage system.           Advance toxicity: No effects hown.           Additional ecological Information:           Do not allow undiked product or large quantities to reach ground water, water course or sewage system.           Advance toxicity: No effects hown.           Additional ecological Information:           Do not allow undiked product or large quantities to reach ground water, water course or sewage system.           Advance effects hown.           Bo policable.           Other adverse ef			
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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. I Ecological information Territy Aquetic toxicity: No further relevant information available. Persistence and degradability to further relevant information available. Bioaccumulative potential No further relevant information available. Mobility in soil No further relevant information available. Do not allow material to be released to the environment without proper governmental permits. Do not allow material to be released to the environment without proper governmental permits. Do not allow material to be released to the environment without proper governmental permits. Do not allow material to be released to the environment without proper governmental permits. Do not allow setting the environment. We set reatment methods Recommendation: Disploable. I Transport Information UN-Number DOT, ADN, ADN, IMDG, IATA Not applicable DOT, ADN, IMDG, IATA Not applicable Pecking group DOT, ADR, ADN, IMDG, IATA Special precautions for user Not applicable DOT, MDR, IATA Special precautions for user Not applicable Pecking group DOT, ADR, ADN, IMDG, IATA Special precautions for user Transport Additional Information: UN womes in the According to Annex II of MARPOL7378 and the IBC Code Not applicable. Transport Model Regulation*: - - 5 Regulatory information Special precautions for user Transport Additional Information: DOT Marine Poliutant (DOT): No Mu Wodel Regulation*: - - - 5 Regulatory information	Specific target organ system toxicity - repeated 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.         12 Ecological information         Toxicity:         Aquatic toxicity: No further relevant information available.         Brasistence and degradatility No turther relevant information available.         Brasistence and degradatility No turther relevant information available.         Brasistence and degradatility No turther relevant information available.         Brasistence and degradation 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.         PBT: Not applicable.         VPVes: Not applicable.         Other adverse effects No further relevant information available.         33 Disposal considerations         Waste treatment methods         Recommendation Consult state, local or national regulations to ensure proper disposal.         Uncleance packagings:         VI-Humber         DoT, ADN, MDG, IATA         VI-Row and according to official regulations.         If arransport hazard class(es)         DOT, ADR, ADN, IMDG, IATA         VI applicable         DOT, MDG,	Aspiration hazard: No effects known.		
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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.         Aquatic toxicity: No further relevant information available.         Ageneral notes:         Do not allow material to be relevant information available.         Avoid transfer into 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 FBT and VPVB assessment         PBT: Not applicable.         Other adverse effects No further relevant information available.         31 Disposal considerations         Waste treatment methods         Recommendation: Disposal must be made according to official regulations.         14 Transport Information         UH-Number         DOT, ADN, IMDG, IATA         Not applicable         UD, MDG, IATA         Not applicable         Transport Information         UH-Number         DOT, ADN, IMDG, IATA         Not applicable         Transport Mazer class(es)         DT, ADR, ADN, IMDG, IATA			
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Bioeccumulative potential No further relevant information available. Additional ecological information: Do not allow unditided product or large quantities to reach ground water, water course or sewage system. Avoid transferial to be released to the environment without proper governmental permits. Do not allow unditided product or large quantities to reach ground water, water course or sewage system. Avoid transferial to the environment. Results of PBT and vPvB assessment PBT: Not applicable. VPVS: Not applicable. Transport hazard class(es) DOT, ADR, MDG, IATA Class. Not applicable. Environmental hazards: Not applicable. Environmental hazards: Not applicable. Environmental hazards: Not applicable. Environmental hazards: Not applicable. Transport in bulk according to Annex II of MARPOLT3778 and the IBC Code Not applicable. Transport in bulk according to Annex II of MARPOLT3778 and the IBC Code Not applicable. Transport in bulk according to Annex II of MARPOLT3778 and the IBC Code Not applicable. Transport in bulk according to Annex II of MARPOLT3778 and the IBC Code Not applicable. Transport in bulk according to Annex II of MARPOLT3778 and the IBC Code Not applicable. Transport in bulk according to Annex II of MARPOLT3778 and the IBC Code Not applicable. Transport	ersistence and degradability No further relevant information available.		
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Avoid transfer into the environment. Results of PBT and VPX assessment PBT: Not applicable. VPVB: Not applicable. Other adverse effects No further relevant information available. 33 Disposal considerations Waste treatment methods Recommendation Consult state, local or national regulations to ensure proper disposal. Uncleaned packagings: Recommendation: Disposal must be made according to official regulations. 14 Transport Information UN-Number DOT, ADN, IMDG, IATA Not applicable Transport hazard class(es) DOT, ADR, ADN, IMDG, IATA Not applicable Environmental hazards: Not applicable Environmental hazards: Not applicable Environmental hazards: Not applicable. Transport/Additional information: DOT MARPOL 73/78 and the IBC Code Not applicable. Transport/Additional information: DOT Marine Pollutant (DOT): No UN "Model Regulation": 5 Regulatory information Safety, health and environmental regulations/legislation specific for the substance or mixture GHS Babe elements Not applicable or mixture Cor mixture define the Not applicable or mixture or mixture CHS	o not allow undiluted product or large quantities to reach ground water, water	course or sewage system.	
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Other adverše effects No further relevant information available.         (3) Disposal considerations         Waste treatment methods         Recommendation Consult state, local or national regulations to ensure proper disposal. Uncleaned packagings:         Recommendation Cisposal must be made according to official regulations.         (4) Transport information         UN-Number         DOT, ADN, IMDG, IATA         Not applicable         UN proper shipping name         DOT, ADR, ADN, IMDG, IATA         Not applicable         Transport Integration         Not applicable         DOT, ADR, ADN, IMDG, IATA         Not applicable         Transport lazard class(es)         DOT, IMDG, IATA         Not applicable         Packing group         DoT, IMDG, IATA         Not applicable         Packing group         DoT, IMDG, IATA         Not applicable         Environmental hazards:         Not applicable         Transport Additional information:         DOT         Marine Pollutant (DOT):         No         UN "Model Regulation":         -         15 Regulatory information         Safety, health and environmental regulations	BT: Not applicable.		
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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       DOT         Marine Pollutant (DOT):       No         UN "Model Regulation":       -         15 Regulatory information       Safety, health and environmental regulations/legislation specific for the substance or mixture GHS label elements Not applicable.	ОТ, IЙĎĠ, IĂTA	Not applicable	
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5 I5 Regulatory information Safety, health and environmental regulations/legislation specific for the substance or mixture GHS label elements Not applicable	· /	No	
Safety, health and environmental regulations/legislation specific for the substance or mixture GHS label elements Not applicable	N "Model Regulation":	-	
Safety, health and environmental regulations/legislation specific for the substance or mixture GHS label elements Not applicable	togulatory information		
GHS label elements Not applicable	•		
Hazard pictograms Not applicable		ubstance or mixture	
	azard pictograms Not applicable ignal word Not applicable		
Signal word Not applicable Hazard statements Not applicable	i <b>gnal word</b> Not applicable azard 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 res to report and development only. This product must be used by a directly used the upper list of the tophically qualified individual on defined by TECA. This	ational 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 res 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. Thi	ns product is not listed in the U.S. Environmental Protection Agency Toxic Superserved and development only. This product must be used by or directly un	ibstances Control Act Chemical Substance Inventory. Use of this proc der the supervision of a technically qualified individual as defined by T	SCA This
product must not be used for commercial purposes or in formulations for commercial purposes. This product is not listed on the Canadian Domestic Substances List (DSL) or the Canadian Non-Domestic Substances List (NDSL).	oduct must not be used for commercial purposes or in formulations for comm	ercial purposes.	
This product is not listed on the Canadian Domestic Substances List (DSL) or the Canadian Non-Domestic Substances List (NDSL). SARA Section 313 (specific toxic chemical listings) Substance is not listed.	his product is not listed on the Canadian Domestic Substances List (DSL) or the ARA Section 313 (specific toxic chemical listings) Substance is not listed	he Canadian Non-Domestic Substances List (NDSL).	
California Proposition 65	alifornia Proposition 65		
Prop 65 - Chemicals known to cause cancer Substance is not listed.	rop 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.	rop 65 - Developmental toxicity, female Substance is not listed.		
Prop 65 - Developmental toxicity, male Substance is not listed.	rop 65 - Developmental toxicity. male Substance is not listed.	iduala	
Information about limitation of use: For use only by technically qualified individuals. Other regulations, limitations and prohibitive regulations		/IQUAIS.	
Substance of Very High Concern (SVHC) according to the REACH Regulations (EC) No. 1907/2006. Substance is not listed.	ther regulations, limitations and prohibitive regulations		
(Contd. on	ther regulations, limitations and prohibitive regulations	tions (EC) No. 1907/2006. Substance is not listed.	

## Product name: 6-Chloro-9-(2-tetrahydropyranyl)purine

(Contd. of page 3) The conditions of restrictions according to Article 67 and Annex XVII of the 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) Substance is not listed. Chemical safety assessment: A Chemical Safety Assessment has not been carried out. 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 use Department issuing SDS: Global Marketing Department Date of preparation / last revision 11/23/2015 / -Abbreviations and acronyms: ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road) 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 Information System (USA) WHMIS: Workplace Hazardous Materials Information System (Canada) LC50: Lethal dose, 50 percent USD: 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) MAR: International Agency for Research on Cancer EPA: Environmental Protection Agency (USA)

USA