

Vitamin B Formulation

Version	Revision Date:	SDS Number:	Date of last issue: 06.07.2024
4.1	28.09.2024	292438-00022	Date of first issue: 02.10.2015

SECTION 1. PRODUCT AND COMPANY IDENTIFICATION

Product name : Vitamin B Formulation

Manufacturer or supplier's	deta	ails				
Company name of supplier	:	MSD				
Address	:	126 E. Lincoln Avenue				
		Rahway, New Jersey U.S.A. 07065				
Telephone	:	908-740-4000				
Emergency telephone	:	1-908-423-6000				
E-mail address	:	EHSDATASTEWARD@msd.com				
Recommended use of the chemical and restrictions on use						

Recommended use of the chemical and restrictions on use

Recommended use	:	Pharmaceutical
Restrictions on use	:	Not applicable

SECTION 2. HAZARDS IDENTIFICATION

GHS Classification

Not a hazardous substance or mixture.

GHS label elements

No hazard pictogram, no signal word, no hazard statement(s), no precautionary statement(s) required.

Other hazards

None known.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Mixture

Components

Chemical name	CAS-No.	Concentration (% w/w)
Nicotinamide	98-92-0	>= 5 -< 10
Pyridoxine Hydrochloride	58-56-0	>= 1 -< 5
Thiamine hydrochloride	67-03-8	>= 1 -< 5

SECTION 4. FIRST AID MEASURES

If inhaled	:	If inhaled, remove to fresh air. Get medical attention if symptoms occur.
In case of skin contact	:	Wash with water and soap as a precaution. Get medical attention if symptoms occur.
In case of eye contact	:	Flush eyes with water as a precaution. Get medical attention if irritation develops and persists.
If swallowed	:	If swallowed, DO NOT induce vomiting. Get medical attention if symptoms occur. Rinse mouth thoroughly with water.
Most important symptoms and effects, both acute and delayed	:	None known.
Protection of first-aiders	:	No special precautions are necessary for first aid responders.



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Note	Notes to physician		Treat symptomation	cally and supportively.	
SECTION	SECTION 5. FIRE-FIGHTING MEASURES				
Suita	able extinguishing media	:	Water spray Alcohol-resistant f Carbon dioxide (C Dry chemical		
	Unsuitable extinguishing media		None known.		
	Specific hazards during fire fighting		Exposure to comb	oustion products may be a hazard to health.	
Haza ucts	ardous combustion prod-	:	Carbon oxides Nitrogen oxides (NOx) Chlorine compounds Oxides of phosphorus Metal oxides		
Spec ods	cific extinguishing meth-	:	Use extinguishing measures that are appropriate to local cir- cumstances and the surrounding environment. Use water spray to cool unopened containers. Remove undamaged containers from fire area if it is safe to de so. Evacuate area.		
	cial protective equipment re-fighters	:	Wear self-contained breathing apparatus for firefighting if necessary. Use personal protective equipment.		

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protec- tive equipment and emer- gency procedures	:	Follow safe handling advice (see section 7) and personal protective equipment recommendations (see section 8).
Environmental precautions	:	Avoid release to the environment. Prevent further leakage or spillage if safe to do so. Prevent spreading over a wide area (e.g., by containment or oil barriers). Retain and dispose of contaminated wash water. Local authorities should be advised if significant spillages cannot be contained.
Methods and materials for containment and cleaning up	:	Soak up with inert absorbent material. For large spills, provide diking or other appropriate containment to keep material from spreading. If diked material can be pumped, store recovered material in appropriate container. Clean up remaining materials from spill with suitable absorbent.



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			Local or national regulations may apply to releases and disposal of this material, as well as those materials and items employed in the cleanup of releases. You will need to determine which regulations are applicable. Sections 13 and 15 of this SDS provide information regarding certain local or national requirements.			
SECTION	7. HANDLING AND ST	[OR	AGE			
Tech	Technical measures		See Engineering measures under EXPOSURE CONTROLS/PERSONAL PROTECTION section.			
Local	I/Total ventilation	:	Use only with adequate ventilation.			
Advic	Advice on safe handling		Handle in accord practice, based o assessment	ance with good industrial hygiene and safety n the results of the workplace exposure vent spills, waste and minimize release to the		
Hygie	Hygiene measures		If exposure to chemical is likely during typical use, provide eye flushing systems and safety showers close to the working place. When using do not eat, drink or smoke. Wash contaminated clothing before re-use.			
Cond	litions for safe storage	:	Keep in properly labeled containers.			
Mate	Materials to avoid :			nce with the particular national regulations. the following product types: agents		

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components	CAS-No.	Value type (Form of exposure)	Control parame- ters / Permissible concentration	Basis
Pyridoxine Hydrochloride	58-56-0	TWA	OEB 3 (>= 10 < 100 μg/m3)	Internal
Thiamine hydrochloride	67-03-8	TWA	OEB 1 (>= 1000 μg/m3)	Internal

Engineering measures		Ensure adequate ventilation, especially in confined areas. Minimize workplace exposure concentrations.
Personal protective equipme	ent	
Respiratory protection	:	If adequate local exhaust ventilation is not available or exposure assessment demonstrates exposures outside the recommended guidelines, use respiratory protection.
Filter type Hand protection	:	Particulates type
Remarks Eye protection		Wash hands before breaks and at the end of workday. Wear the following personal protective equipment: Safety glasses



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Skin	Skin and body protection		Skin should be w	ashed after contact.
SECTION	9. PHYSICAL AND CH	EMI	CAL PROPERTIE	S
Appe	arance	:	liquid	
Color		:	No data availabl	e
Odor		:	No data availabl	e
Odor	Threshold	:	No data availabl	e
рН		:	No data availabl	e
Meltir	ng point/freezing point	:	No data availabl	e
Initial range	boiling point and boiling	:	No data availabl	e
Flash	point	:	No data availabl	e
Evap	oration rate	:	No data availabl	e
Flam	mability (solid, gas)	:	Not applicable	
Flam	mability (liquids)	:	No data availabl	e
	r explosion limit / Upper nability limit	:	No data availabl	e
	r explosion limit / Lower nability limit	:	No data availabl	e
Vapo	r pressure	:	No data availabl	e
Relat	ive vapor density	:	No data availabl	e
Relat	ive density	:	No data availabl	e
Dens	ity	:	No data availabl	e
	bility(ies) ater solubility	:	No data availabl	e
	ion coefficient: n- ol/water	:	No data availabl	e
	gnition temperature	:	No data availabl	e
Deco	mposition temperature	:	No data availabl	e
Visco Vi	sity scosity, dynamic	:	No data availabl	e
Vi	scosity, kinematic	:	No data availabl	e



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Explo	sive properties	:	Not explosive	
Oxidiz	zing properties	:	The substance of	r mixture is not classified as oxidizing.
Molecular weight		:	No data available	e
	e characteristics le size	:	No data availabl	9

SECTION 10. STABILITY AND REACTIVITY

Reactivity	:	Not classified as a reactivity hazard.
Chemical stability	:	Stable under normal conditions.
Possibility of hazardous reac-	:	Can react with strong oxidizing agents.
tions		
Conditions to avoid	:	None known.
Incompatible materials	:	Oxidizing agents
Hazardous decomposition	:	No hazardous decomposition products are known.
products		

SECTION 11. TOXICOLOGICAL INFORMATION

Information on likely route Inhalation Skin contact Ingestion Eye contact	es of	exposure
Acute toxicity Not classified based on avai	lable	information.
Product: Acute oral toxicity	:	Acute toxicity estimate: > 5,000 mg/kg Method: Calculation method
<u>Components:</u>		
Nicotinamide:		
Acute oral toxicity	:	LD50 (Rat): > 2,500 mg/kg Method: OECD Test Guideline 423 Assessment: The substance or mixture has no acute oral tox- icity
Acute inhalation toxicity	:	LC50 (Rat): > 3.8 mg/l Exposure time: 4 h Test atmosphere: dust/mist Method: OECD Test Guideline 436 Assessment: The substance or mixture has no acute inhala- tion toxicity Remarks: Based on data from similar materials
Acute dermal toxicity	:	LD50 (Rabbit): > 2,000 mg/kg



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) Test Guideline 402 he substance or mixture has no acute derma
Pyrid	oxine Hydrochloride		
Acute	oral toxicity	: LD50 (Rat): 4,0	000 mg/kg
Thian	nine hydrochloride:		
Acute	oral toxicity	: LD50 (Rat): 3,7 Target Organs	710 mg/kg : Central nervous system, Lungs
		LD50 (Mouse):	8,224 mg/kg
	corrosion/irritation		
	assified based on ava	able information.	
Comp	oonents:		
	inamide:		
Speci		: Rabbit	11.1
Metho Resul		: OECD Test Gu : No skin irritatio	
1000			
-	oxine Hydrochloride		
Speci Resul		: Rabbit : No skin irritatio	
Resu	l	. NO SKIN IMALIO	TI
Serio	us eye damage/eye i	ritation	
Not cl	assified based on ava	able information.	
<u>Comp</u>	oonents:		
Nicot	inamide:		
Speci		: Rabbit	· · · · · · ·
Resul Metho		: OECD Test Gu	s, reversing within 7 days ideline 405
Weate		. 0200 1031 00	
Pyrid	oxine Hydrochloride		
Speci		: Rabbit	
Resul	t	: No eye irritatio	n
Resp	iratory or skin sensit	zation	
Skin	sensitization		
••••••	assified based on ava	able information.	
-			
Not cl	iratory sensitization		



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<u>Comp</u>	onents:		
Nicoti	namide:		
Test T	vpe	: Maximization	Test
	s of exposure	: Skin contact	
Specie		: Guinea pig	
Metho		: OECD Test G	uideline 406
Result		: negative	
Pyrido	oxine Hydrochlorid	e :	
Test T		: Maximization	Test
	s of exposure	: Skin contact	
Specie		: Guinea pig	
Metho Result		: OECD Test G	uideline 406
Result		: negative	
Germ	cell mutagenicity		
	assified based on av	ailable information.	
<u>Comp</u>	<u>onents:</u>		
Nicoti	namide:		
Genot	oxicity in vitro		icterial reverse mutation assay (AMES) D Test Guideline 471 ve
Genot	oxicity in vivo	cytogenetic as Species: Mou Application Re	se bute: Intraperitoneal injection D Test Guideline 474
Pvrido	oxine Hydrochlorid	9:	
-	oxicity in vitro		cterial reverse mutation assay (AMES) ve
	nogenicity assified based on av	ailable information.	
•	ductive toxicity assified based on av	ailable information.	
Comp	onents:		
Nicoti	namide:		
Effects	s on fetal developme	Species: Rab Application Re	oute: Ingestion D Test Guideline 414



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Pyrid	oxine Hydrochloride:	_		
-	s on fetal development	:	Test Type: Eml Species: Rat Application Rou Result: negativ	
	-single exposure assified based on availa	ble	information.	
	-repeated exposure assified based on availa	ble	information.	
Repe	ated dose toxicity			
Comp	oonents:			
Nicot	inamide:			
	EL cation Route sure time	:	Rat 215 mg/kg Ingestion 28 Days OECD Test Gu	ideline 407
-	ation toxicity	bla	information	
Not cl	ation toxicity assified based on availa 12. ECOLOGICAL INFO			
Not cl	assified based on availa			
Not cl CTION Ecoto	assified based on availa			
Not cl CTION Ecoto <u>Comp</u> Nicot	assified based on availa		IATION LC50 (Poecilia Exposure time:	reticulata (guppy)): > 1,000 mg/l 96 h Test Guideline 203
Not cl CTION Ecoto Comr Nicot Toxici	assified based on availa 12. ECOLOGICAL INFO pxicity ponents: inamide:		IATION LC50 (Poecilia Exposure time: Method: OECD EC50 (Daphnia Exposure time:	96 h Test Guideline 203 magna (Water flea)): > 1,000 mg/l
Not cl CTION Ecoto Comp Nicot Toxici aquat	assified based on availa 12. ECOLOGICAL INFO points: inamide: ity to fish ity to daphnia and other ic invertebrates ity to algae/aquatic	DRN :	ATION LC50 (Poecilia Exposure time: Method: OECD EC50 (Daphnia Exposure time: Method: OECD EC50 (Desmoc mg/l Exposure time:	96 h Test Guideline 203 magna (Water flea)): > 1,000 mg/l 24 h Test Guideline 202 esmus subspicatus (green algae)): > 1,00
Not cl CTION Ecoto Comr Nicot Toxici aquat	assified based on availa 12. ECOLOGICAL INFO points: inamide: ity to fish ity to daphnia and other ic invertebrates ity to algae/aquatic	DRN :	ATION LC50 (Poecilia Exposure time: Method: OECD EC50 (Daphnia Exposure time: Method: OECD EC50 (Desmoor mg/l Exposure time: Method: OECD NOEC (Desmoor Exposure time:	96 h Test Guideline 203 a magna (Water flea)): > 1,000 mg/l 24 h Test Guideline 202 desmus subspicatus (green algae)): > 1,00 72 h Test Guideline 201 desmus subspicatus (green algae)): 560 r

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d other : radability	Exposure time:	magna (Water flea)): > 100 mg/l
: d other :	Exposure time: EC50 (Daphnia	96 h magna (Water flea)): > 100 mg/l
radability :		
:		
:		
:		
	Biodegradation Exposure time:	
oride:		
:	Biodegradation Exposure time:	
ential		
:	log Pow: -0.38	
oride: :	log Pow: 4.32	
6		
		S

Waste from residues	: Do not dispose of waste into sewer.
Contaminated packaging	Dispose of in accordance with local regulations. Empty containers should be taken to an approved waste
	handling site for recycling or disposal. If not otherwise specified: Dispose of as unused product.

SECTION 14. TRANSPORT INFORMATION

International Regulations



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	UNRT Not reg	DG gulated as a dangerous	s good					
	IATA-DGR Not regulated as a dangerous good							
	IMDG- Not reg	Code gulated as a dangerous	s good					
	Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code Not applicable for product as supplied.							
	Domestic regulation							
	NOM-002-SCT Not regulated as a dangerous good							
	Special precautions for user Not applicable							
SEC	CTION 1	15. REGULATORY INF	FORMATION					
	Safety mixtu		nental regulations/le	gislation specific for the substance or				
	essent	al Law for the control of ial chemical products a sing capsules, tablets a	and machinery for	: Not applicable				
	The in AICS	gredients of this proc	duct are reported in t : not determined	he following inventories:				

DSL	:	not determined

IECSC : not determined

SECTION 16. OTHER INFORMATION

Revision Date	:	28.09.2024
Date format	:	dd.mm.yyyy

Full text of other abbreviations

AIIC - Australian Inventory of Industrial Chemicals; ANTT - National Agency for Transport by Land of Brazil; ASTM - American Society for the Testing of Materials; bw - Body weight; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DSL - Domestic Substances List (Canada); ECx - Concentration associated with x% response; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; ERG - Emergency Response Guide; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemi-



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cal Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; n.o.s. - Not Otherwise Specified; Nch - Chilean Norm; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NOM - Official Mexican Norm; NTP - National Toxicology Program; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; SADT - Self-Accelerating Decomposition Temperature; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TDG - Transportation of Dangerous Goods; TECI - Thailand Existing Chemicals Inventory; TSCA - Toxic Substances Control Act (United States); UN - United Nations; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative; WHMIS - Workplace Hazardous Materials Information System

Sources of key data used to	:	Internal technical data, data from raw material SDSs, OECD
compile the Material Safety		eChem Portal search results and European Chemicals Agen-
Data Sheet		cy, http://echa.europa.eu/

The information is considered as correct, but not exhaustive, and will be used only as a guide, which is based in the current knowledge of the substance or mixture, and is applicable to proper safety precautions for the product.

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