

HORDAPHOS MDB

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Version : 2 - 3 / USA

Revision Date: 06/12/2019
Date of printing :09/29/2020

SECTION 1. IDENTIFICATION

Identification of the company:	Clariant Corporation 4000 Monroe Road Charlotte, NC, 28205 Telephone No.: +1 704 331 7000
	Information of the substance/preparation: Product Stewardship, +1-704-331-7710
	Emergency tel. number: +1 800-424-9300 CHEMTREC

Trade name: HORDAPHOS MDB
Material number: 107048

Primary product use: Additive for acidic cleaning agents.
Additive For Use In Paints, Lacquers And Printing Inks
Raw material for cleaning agents
Auxiliary for metal working

Chemical family: Phosphoric acid, butyl ester

SECTION 2. HAZARDS IDENTIFICATION

GHS classification in accordance with 29 CFR 1910.1200

Skin corrosion : Category 1B

Serious eye damage : Category 1

GHS label elements

Hazard pictograms :



Signal word : Danger

Hazard statements : H314 Causes severe skin burns and eye damage.
H318 Causes serious eye damage.

Precautionary statements : **Prevention:**
P264 Wash skin thoroughly after handling.
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.

Response:
P301 + P330 + P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
P303 + P361 + P353 IF ON SKIN (or hair): Take off immediately

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all contaminated clothing. Rinse skin with water/shower.
P304 + P340 + P310 IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER/doctor.
P305 + P351 + P338 + P310 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER/doctor.
P363 Wash contaminated clothing before reuse.

Storage:

P405 Store locked up.

Disposal:

P501 Dispose of contents/ container to an approved waste disposal plant.

Other hazards

None known.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Substance
Substance name : Phosphoric acid, butyl ester
CAS-No. : Not Assigned

Components

Chemical name	CAS-No.	Concentration (% w/w)
Butyl dihydrogen phosphate	1623-15-0	> 35 - < 55
Di-n-butylhydrogene phosphate	107-66-4	> 35 - < 55
Butanol	71-36-3	1 - 10

Any concentration shown as a range is to protect confidentiality or is due to batch variation.

SECTION 4. FIRST AID MEASURES

General advice : Remove/Take off immediately all contaminated clothing.

If inhaled : Remove to fresh air immediately. Get medical attention immediately.
If not breathing, give artificial respiration.
If breathing is difficult, give oxygen.

In case of skin contact : Wash off immediately with plenty of water for at least 15 minutes.
Use a mild soap if available.
Remove contaminated clothing and shoes.
If skin irritation occurs: Get medical advice/ attention.

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- In case of eye contact : Hold eyelids apart and flush eyes with plenty of water for at least 15 minutes. Get medical attention.
- If swallowed : If conscious, give the victim plenty of water to drink. Never give anything by mouth to an unconscious person. Consult a physician. Do NOT induce vomiting.
- Most important symptoms and effects, both acute and delayed : None known.
- Notes to physician : Treat symptomatically. Seek ophthalmologist treatment if spilled in eyes.

SECTION 5. FIREFIGHTING MEASURES

- Suitable extinguishing media : water
Foam
Dry powder
Carbon dioxide (CO₂)
- Unsuitable extinguishing media : Not applicable
- Specific hazards during firefighting : In case of fires, hazardous combustion gases are formed:
Carbon monoxide (CO)
Carbon dioxide (CO₂)
Phosphorus oxides (eg Phosphorus pentoxide)
- Special protective equipment for firefighters : Self-contained breathing apparatus
In case of fire, use acid-resistant equipment / personal protective equipment.

SECTION 6. ACCIDENTAL RELEASE MEASURES

- Personal precautions, protective equipment and emergency procedures : Avoid contact with skin and eyes.
Wear personal protective equipment. Unprotected persons must be kept away.
Wearing appropriate personal protective equipment, contain spill, ventilate area of spill or leak, remove all sparking devices or ignition sources, collect onto inert absorbent, and place in a suitable container.
- Environmental precautions : The product should not be allowed to enter drains, water courses or the soil.
Collect contaminated fire extinguishing water separately. This must not be discharged into drains.
- Methods and materials for containment and cleaning up : Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust).

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Dispose of contaminated material as prescribed

SECTION 7. HANDLING AND STORAGE

- Advice on protection against fire and explosion : No special measures necessary.
- Advice on safe handling : Keep away from heat, sparks and open flames. - Avoid breathing vapors or contact with skin, eyes, and clothing.- Use only with adequate ventilation and proper protective eyewear, face shield, gloves and clothing. Wash thoroughly after handling. Keep container closed.
- Further information on storage conditions : Store in a cool, dry, well-ventilated area. Keep container sealed when not in use.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION**Components with workplace control parameters**

Components	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
Di-n-butylhydrogene phosphate	107-66-4	TWA (Inhalable fraction and vapor)	5 mg/m ³	ACGIH
		TWA	1 ppm 5 mg/m ³	NIOSH REL
		ST	2 ppm 10 mg/m ³	NIOSH REL
		TWA	1 ppm 5 mg/m ³	OSHA Z-1
		TWA	1 ppm 5 mg/m ³	OSHA P0
		STEL	2 ppm 10 mg/m ³	OSHA P0
Butan-1-ol	71-36-3	TWA	20 ppm	ACGIH
		C	50 ppm 150 mg/m ³	NIOSH REL
		TWA	100 ppm 300 mg/m ³	OSHA Z-1
		C	50 ppm 150 mg/m ³	OSHA P0

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Personal protective equipment

- Respiratory protection : NIOSH approved full face respirator with organic vapor/ acid gas cartridges recommended for exposures exceeding the TLV.
- Hand protection
Remarks : Butyl Rubber, PVC Or Neoprene.
- Eye protection : Tightly fitting safety goggles
- Skin and body protection : Acid resistant coats and overalls are appropriate for work conditions. Full acid suit and NIOSH approved self-contained breathing apparatus should be available to handle major spills.
- Protective measures : Avoid contact with skin and eyes.
- Hygiene measures : Remove/Take off immediately all contaminated clothing. Clean skin thoroughly after work; apply skin cream.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

- Appearance : Liquid
- Colour : light yellow
- Odour : ester-like
- Odour Threshold : Not tested
- pH : 1.9 (68 °F / 20 °C)
Concentration: 10 g/l
Isopropanol/Water 3:1
- Melting point : < -58 °F / -50 °C
Method: DSC
GLP: no
- Boiling range : 460 - 466 °F / 238 - 241 °C
Method: OECD Test Guideline 103
GLP: no
- Flash point : 225 °F / 107 °C
(1,013 hPa)
Method: DIN EN ISO 3679 (closed cup)
- Self-ignition : 617 °F / 325 °C
Method: Directive 84/449/EEC, A.15
- Burning number : Not applicable
- Upper explosion limit / upper : Not applicable

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flammability limit

Lower explosion limit / Lower
flammability limit : Not applicableVapour pressure : 0.000015 Pa (68 °F / 20 °C)
Method: OECD Test Guideline 104Density : 1.14 g/cm³ (68 °F / 20 °C)
Method: DIN 51757

Bulk density : Not applicable

Solubility(ies)
Water solubility : 61 g/l (68 °F / 20 °C)
Method: OECD Test Guideline 105Partition coefficient: n-
octanol/water : log Pow: -0.3
Method: OECD Test Guideline 107Decomposition temperature : > 392 °F / > 200 °C
Heating rate: 5 K/min
Method: DTA302 °F / 150 °C
Method: DSC
The data relate to the SADT (Self Accelerating Decomposition
Temperature)
The substance or mixture is not classified self-reactive.Decomposition energy (mass): 500 kJ/kg
Method: DSCViscosity
Viscosity, dynamic : 205 mPa.s (77 °F / 25 °C)
Method: DIN 51398Explosive properties : Not explosive
Not explosive
Method: Expert judgementOxidizing properties : The substance or mixture is not classified as oxidizing.
Method: Regulation (EC) No. 440/2008, Annex, A.21
not oxidizing

Impact sensitivity : Not impact sensitive.

Surface tension : 50.8 N/m, 68 °F / 20 °C, OECD Test Guideline 115

Particle size : Not applicable

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SECTION 10. STABILITY AND REACTIVITY

Reactivity	:	See section 10.3. "Possibility of hazardous reactions"
Chemical stability	:	Stable
Possibility of hazardous reactions	:	Reactions with alkalis. Exothermic reaction The substance or mixture does not emit flammable gases in contact with water.
Conditions to avoid	:	Keep away from strong bases.
Incompatible materials	:	See under section "Conditions to avoid"
Hazardous decomposition products	:	No decomposition if used as directed.

SECTION 11. TOXICOLOGICAL INFORMATION**Information on likely routes of exposure**

Eye contact
Skin contact
Inhalation
Ingestion
Skin Absorption

Acute toxicity**Product:**

Acute oral toxicity	:	LD50 (Rat, male and female): 5,300 mg/kg Method: OECD Test Guideline 401
Acute inhalation toxicity	:	Remarks: Study not performed as the substance is corrosive.
Acute dermal toxicity	:	Remarks: Study not performed as the substance is corrosive.

Skin corrosion/irritation**Product:**

Species: Rabbit
Method: OECD Test Guideline 404
Result: Causes burns.

Serious eye damage/eye irritation**Product:**

Remarks: Study not performed as the substance is corrosive.

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Respiratory or skin sensitisation**Product:**

Remarks: Study not performed as the substance is corrosive.

Assessment: Causes severe skin burns and eye damage.

Germ cell mutagenicity**Product:**

Genotoxicity in vitro : Test Type: Mammalian cell gene mutation assay
Test system: Chinese hamster fibroblasts
Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 476
Result: negative
Remarks: By analogy with a product of similar composition

Test Type: Chromosome aberration test in vitro
Test system: Chinese hamster cells
Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 473
Result: negative

Genotoxicity in vivo : Test Type: Micronucleus test
Species: Mouse (male and female)
Strain: NMRI
Dose: 100, 300, 1000 mg/kg bw
Method: OECD Test Guideline 474
Result: negative

Germ cell mutagenicity - Assessment : In vitro tests did not show mutagenic effects, In vivo tests did not show mutagenic effects

Carcinogenicity**Product:**

Carcinogenicity - Assessment : No information available.

IARC Not listed

OSHA Not listed

NTP Not listed

Reproductive toxicity**Product:**

Effects on fertility : Test Type: Fertility
Species: Rat, male and female
Strain: wistar
Application Route: oral (gavage)
Dose: 50, 120, 450 mg/kg bw/d

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General Toxicity - Parent: NOAEL: 120 mg/kg body weight
General Toxicity F1: NOAEL: 120 mg/kg body weight
Method: OECD Test Guideline 422
Remarks: By analogy with a product of similar composition

Effects on foetal development : Test Type: reproductive and developmental toxicity study
Species: Rat
Strain: wistar
Dose: 50, 200, 400 milligram per kilogram
General Toxicity Maternal: NOAEL: 400 mg/kg body weight
Embryo-foetal toxicity: NOAEL: 400 mg/kg body weight
Method: OECD Test Guideline 414
Result: No adverse effects
GLP: yes

Reproductive toxicity - Assessment : No evidence of adverse effects on sexual function and fertility, or on development, based on animal experiments.

STOT - single exposure**Product:**

Remarks: no data available

STOT - repeated exposure**Product:**

Remarks: no data available

Repeated dose toxicity**Product:**

Species: Rat, male and female
NOAEL: 120 (females); 450 (males) mg/kg bw/day
Application Route: oral (gavage)
Dose: 50, 120, 450 mg/kg bw/d
Method: OECD Test Guideline 422
Remarks: By analogy with a product of similar composition

Species: Rat, male and female
NOAEL: 400 mg/kg bw/day
Application Route: oral (gavage)
Exposure time: 90 d
Dose: 50, 200, 400 mg/kg bw/d
Method: OECD Test Guideline 408
GLP: yes

Repeated dose toxicity - Assessment : Causes severe skin burns and eye damage.

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Aspiration toxicity**Product:**

no data available

SECTION 12. ECOLOGICAL INFORMATION**Ecotoxicity****Product:**

- Toxicity to fish : EC50 (Danio rerio (zebra fish)): > 100 mg/l
Exposure time: 96 h
Test Type: static test
Method: OECD Test Guideline 203
Remarks: By analogy with a product of similar composition
- Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): > 100 mg/l
Exposure time: 48 h
Test Type: static test
Method: OECD Test Guideline 202
Remarks: By analogy with a product of similar composition
- Toxicity to algae/aquatic plants : EC50 (Desmodesmus subspicatus (green algae)): > 100 mg/l
End point: Growth rate
Exposure time: 72 h
Test Type: static test
Method: OECD Test Guideline 201
- Toxicity to fish (Chronic toxicity) : Remarks: no data available
- Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : Remarks: no data available
- Toxicity to microorganisms : NOEC (activated sludge, domestic): 1,000 mg/l
Exposure time: 3 h
Test Type: static test
Method: OECD Test Guideline 209
Remarks: By analogy with a product of similar composition

Persistence and degradability**Product:**

- Biodegradability : Inoculum: activated sludge, non-adapted
Result: Readily biodegradable.
Biodegradation: 98 % (Carbon dioxide (CO₂))
Exposure time: 28 d
Method: OECD Test Guideline 301B
Remarks: By analogy with a product of similar composition
- Photodegradation : Remarks: no data available

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Bioaccumulative potential**Product:**

Bioaccumulation : Remarks: Due to the distribution coefficient n-octanol/water, accumulation in organisms is not expected.

Mobility in soil**Product:**

Distribution among environmental compartments : Remarks: no data available

Other adverse effects

no data available

SECTION 13. DISPOSAL CONSIDERATIONS**Disposal methods**

RCRA - Resource Conservation and Recovery Authorization Act Waste Code : Yes -- If it becomes a waste as sold.
: D002

Waste from residues : Can be landfilled or incinerated, when in compliance with local regulations.

Contaminated packaging : Uncontaminated packaging may be taken for recycling

SECTION 14. TRANSPORT INFORMATION**DOT Regulation:**

Proper shipping name: Corrosive liquid, acidic, organic, n.o.s.
Hazard class: 8
Packing group: II
UN/NA-number: UN 3265
Primary hazard class: 8
Technical Name: Phosphoric acid, butyl ester

IATA

Proper shipping name: Corrosive liquid, acidic, organic, n.o.s.
Class: 8
Packing group: II
UN/ID number: UN 3265
Primary risk: 8
Remarks: Shipment permitted
Hazard inducer(s): Phosphoric acid, butyl ester

IMDG

Proper shipping name: Corrosive liquid, acidic, organic, n.o.s.
Class: 8
Packing group: II

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UN no.:	UN 3265
Primary risk:	8
Hazard inducer(s):	Phosphoric acid, butyl ester
EmS:	F-A S-B

SECTION 15. REGULATORY INFORMATION**EPCRA - Emergency Planning and Community Right-to-Know Act****CERCLA Reportable Quantity**

Components	CAS-No.	Component RQ (lbs)	Calculated product RQ (lbs)
Butan-1-ol	71-36-3	5000	*
Butan-1-ol	71-36-3	100	(F003)*

*: Calculated RQ exceeds reasonably attainable upper limit.

A characteristic waste RQ of 100 lbs applies to this product in a waste form: D002

SARA 304 Extremely Hazardous Substances Reportable Quantity

This material does not contain any components with a section 304 EHS RQ.

SARA 311/312 Hazards : Skin corrosion or irritation
 Serious eye damage or eye irritation

Butan-1-ol	71-36-3	1 - 10 %
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Clean Water Act

Contains phosphoric acid at concentrations > 0.1%, a CWA Section 311 hazardous chemical.

The components of this product are reported in the following inventories:

TSCA : On TSCA Inventory, All components are compliant with the TSCA Inventory Notification (Active) rule.

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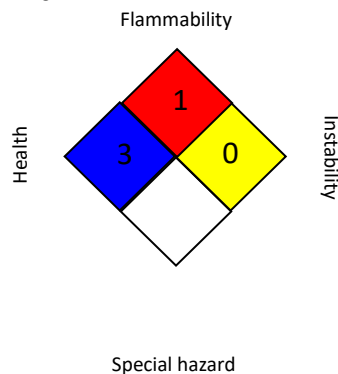
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SECTION 16. OTHER INFORMATION

Further information

NFPA 704:



Full text of other abbreviations

ACGIH	: USA. ACGIH Threshold Limit Values (TLV)
NIOSH REL	: USA. NIOSH Recommended Exposure Limits
OSHA P0	: USA. OSHA - TABLE Z-1 Limits for Air Contaminants - 1910.1000
OSHA Z-1	: USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
ACGIH / TWA	: 8-hour, time-weighted average
NIOSH REL / TWA	: Time-weighted average concentration for up to a 10-hour workday during a 40-hour workweek
NIOSH REL / ST	: STEL - 15-minute TWA exposure that should not be exceeded at any time during a workday
NIOSH REL / C	: Ceiling value not be exceeded at any time.
OSHA P0 / TWA	: 8-hour time weighted average
OSHA P0 / STEL	: Short-term exposure limit
OSHA P0 / C	: Ceiling limit
OSHA Z-1 / TWA	: 8-hour time weighted average

AICS - Australian Inventory of Chemical Substances; ASTM - American Society for the Testing of Materials; bw - Body weight; CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DOT - Department of Transportation; DSL - Domestic Substances List (Canada); ECx - Concentration associated with x% response; EHS - Extremely Hazardous Substance; 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; HMIS - Hazardous Materials Identification System; 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 Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO -

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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; MSHA - Mine Safety and Health Administration; n.o.s. - Not Otherwise Specified; NFPA - National Fire Protection Association; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; 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; RCRA - Resource Conservation and Recovery Act; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RQ - Reportable Quantity; SADT - Self-Accelerating Decomposition Temperature; SARA - Superfund Amendments and Reauthorization Act; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance 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

A Chemical Safety Assessment has been carried out for this substance.

Do not breathe fumes, vapour.

Avoid contact with skin and eyes.

Wear suitable protective equipment.

Keep container closed when not in use.

Observe all necessary precautions for handling corrosive liquids.

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