

SAFETY DATA SHEET

Issue Date 05-May-2020

Revision Date 23-May-2023

Version 3.8

1. IDENTIFICATION						
Product identifier						
Product Name	PAN Indicator Solution 0.1%					
Other means of identification						
Product Code(s)	2122432					
Safety data sheet number	M00388					
UN/ID no	UN3082					
Recommended use of the chemica	l and restrictions on use					
Recommended Use	Laboratory reagent. Determination of manganese					
Uses advised against	gainst Consumer use					
Details of the supplier of the safety data sheet						
<u>Initial Supplier Identifier</u> Hach Sales & Service LP. 3020 Gore Road, London, Ontario N5V 4T7 Canada Tel: 1-800-665-7635						
<u>Manufacturer Address</u> Hach Company, P.O. Box 389, Loveland, CO 80539, USA, +1(970) 669-3050						
Emergency telephone number	Emergency telephone number					
Emergency TelephoneChemtrec 1-800-424-9300 CANUTEC 613-992-4624						

2. HAZARD IDENTIFICATION

Classification

Serious eye damage/eye irritation	Category 1
Reproductive toxicity	Category 1B
Chronic aquatic toxicity	Category 2

Label elements

Signal word - Danger

Hazard statements

H318 - Causes serious eye damage H360 - May damage fertility or the unborn child H411 - Toxic to aquatic life with long lasting effects



Precautionary statements

P280 - Wear protective gloves, protective clothing, eye protection, and face protection

P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing

- P310 Immediately call a POISON CENTER or doctor
- P201 Obtain special instructions before use
- P308 + P313 IF exposed or concerned: Get medical advice/attention

P405 - Store locked up

- P501 Dispose of contents/ container to an approved waste disposal plant
- P273 Avoid release to the environment
- P391 Collect spillage

Unknown Acute Toxicity

0 % of the mixture consists of ingredient(s) of unknown toxicity.

- 0 % of the mixture consists of ingredient(s) of unknown acute oral toxicity
- 0 % of the mixture consists of ingredient(s) of unknown acute dermal toxicity
- 0 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (dust/mist)
- 0 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (vapor)
- 0 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (gas)

Other Hazards Known

May be harmful in contact with skin. Toxic to aquatic life.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance

Not applicable

<u>Mixture</u>

Chemical	Family
Chemical	nature

Mixture. aqueous solution.

Chemical name	Synonyms	CAS No	Percent Range	CBI Protection	Units	HMIRA #
N,N-Dimethylformamide	N,N-Dimethylfor mamide	68-12-2	20 - 30%	-	g	-
Ammonium acetate	No information available	631-61-8	20 - 30%	-	g	-
Poly(oxy-1,2-ethanediyl), .alpha[(1,1,3,3-tetrame thylbutyl)phenyl]omeg ahydroxy-	Triton X	9036-19-5	10 - 13%	-	g	-

4. FIRST AID MEASURES

Description of first aid measures

General advice	Immediate medical attention is required. Show this safety data sheet to the doctor in attendance.
Inhalation	Remove to fresh air. Get medical attention immediately if symptoms occur.
Eye contact	Get immediate medical advice/attention. Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Keep eye wide open while rinsing. Do not rub affected area.
Skin contact	Wash off immediately with soap and plenty of water for at least 15 minutes. Get medical attention if irritation develops and persists.
Ingestion	Clean mouth with water and drink afterwards plenty of water. Never give anything by mouth to an unconscious person. Do NOT induce vomiting. Call a physician.
Self-protection of the first aider	Avoid contact with skin, eyes or clothing. Wear personal protective clothing (see section 8).
Most important symptoms and effe	cts, both acute and delayed
Symptoms	Burning sensation.
Indication of any immediate medical attention and special treatment needed	
Note to physicians	Treat symptomatically.

5. FIRE-FIGHTING MEASURES

Suitable Extinguishing Media	Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
Unsuitable Extinguishing Media	Caution: Use of water spray when fighting fire may be inefficient.
Specific hazards arising from the chemical	No information available.
Hazardous combustion products	Dimethylamine. Nitrogen oxides (NOx). Carbon monoxide. Carbon dioxide (CO2).
Special protective equipment for fire-fighters	Firefighters should wear self-contained breathing apparatus and full firefighting turnout gear. Use personal protection equipment.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

WHMIS Notice	Only persons properly qualified to respond to an emergency involving hazardous substances should respond to a spill involving chemicals. See Section 13, Special Instructions for disposal assistance.
Personal precautions	Avoid contact with skin, eyes or clothing. Use personal protective equipment as required.
Other Information	Refer to protective measures listed in Sections 7 and 8.
Environmental precautions	

Environmental precautions	Prevent further leakage or spillage if safe to do so.		
Methods and material for containm	ent and cleaning up		
Methods for containment	Prevent further leakage or spillage if safe to do so.		
Methods for cleaning up	Pick up and transfer to properly labeled containers.		
Prevention of secondary hazards	Clean contaminated objects and areas thoroughly observing environmental regulations.		

7. HANDLING AND STORAGE

Precautions for safe handling

Advice on safe handling Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin, eyes or clothing. Do not eat, drink or smoke when using this product. Remove contaminated clothing and shoes.

Conditions for safe storage, including any incompatibilities

Storage Conditions

Keep containers tightly closed in a dry, cool and well-ventilated place. Store locked up. Keep out of the reach of children.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Exposure Limits

Chemical name	Alberta OEL	British Columbia OEL	Manitoba OEL	New Brunswick OEL	New Foundland & Labrador OEL
N,N-Dimethylformamide	TWA: 10 ppm	TWA: 5 ppm	TWA: 5 ppm	TWA: 10 ppm	TWA: 5 ppm
20 - 30%	TWA: 30 mg/m ³ SKN*	SKN*	SKN*	SKN*	SKN*

Chemical name	Northwest	Nova Scotia OEL	Nunavut OEL	Ontario TWA	Prince Edward
	Territories OEL				Island OEL
N,N-Dimethylformamide	TWA: 10 ppm	TWA: 5 ppm	TWA: 10 ppm	TWA: 10 ppm	TWA: 5 ppm
20 - 30%	STEL: 15 ppm	SKN*	STEL: 15 ppm	SKN*	
	SKN*		SKN*		

Chemical name	Quebec OEL	Saskatchewan OEL	Yukon OEL
N,N-Dimethylformamide	TWA: 10 ppm	TWA: 10 ppm	STEL: 20 ppm
20 - 30%	TWA: 30 mg/m ³	STEL: 15 ppm	STEL: 60 mg/m ³
	SKN*	SKN*	TWA: 10 ppm
			TWA: 30 mg/m ³
			SKN*

Chemical name	ACGIH TLV	OSHA PEL	NIOSH
N,N-Dimethylformamide 20 - 30%	TWA: 5 ppm S*	TWA: 10 ppm TWA: 30 mg/m ³ (vacated) TWA: 10 ppm (vacated) TWA: 30 mg/m ³ (vacated) SKN*	IDLH: 500 ppm TWA: 10 ppm TWA: 30 mg/m ³
		*	

Legend

See section 16 for terms and abbreviations

Appropriate engineering controls Engineering Controls	Showers Eyewash stations Ventilation systems.
Individual protection measures, su	ch as personal protective equipment
Respiratory protection	No protective equipment is needed under normal use conditions. If exposure limits are exceeded or irritation is experienced, ventilation and evacuation may be required.
Hand Protection	Wear suitable gloves. Gloves must be inspected prior to use. The selected protective gloves have to satisfy the specifications of EU Directive 2016/425 and the standard EN 374 derived from it. Chemical resistant gloves made of butyl rubber or nitrile rubber category III according to EN 374-1:2016.
Eye/face protection	Tight sealing safety goggles.
Skin and body protection	Wear suitable protective clothing.
General Hygiene Considerations	Avoid contact with skin, eyes or clothing. Wear suitable gloves and eye/face protection. Do not eat, drink or smoke when using this product. Wash hands before breaks and immediately after handling the product.
Environmental exposure controls	Local authorities should be advised if significant spillages cannot be contained. Do not allow into any sewer, on the ground or into any body of water.
Thermal hazards	None under normal processing.

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Physical state Appearance Odor	Liquid aqueous solution Ammonia		Color Odor threshold	Dark red to orange No data available
Property_		Values		Remarks • Method
Molecular weight		No data availat	ble	
рН		8.0		@ 20 °C
Melting point/free	zing point	No data availat	ble	
Initial boiling point	nt and boiling range	101 °C / 213	3.8 °F	
Evaporation rate		0.25 (water = 1)	
Vapor pressure		No data availat	ble	
Relative vapor de	ensity	No data availa	ble	
Specific gravity -	VALUE 1	1.044		
Partition Coeffici	ent (n-octanol/water)	Not applicable		
Soil Organic Carl Coefficient	oon-Water Partition	Not applicable		
Autoignition tem	perature	No data availat	ble	

Decomposition temperatureNo data availableDynamic viscosityNo data available

Kinematic viscosity No data available

Solubility(ies)

Water solubility

Water solubility classification	Water solubility	Water Solubility Temperature
Soluble	> 1000 mg/L	25 °C / 77 °F

Solubility in other solvents

Chemical Name	Solubility classification	<u>Solubility</u>	Solubility Temperature	
Acid	Soluble	> 1000 mg/L	25 °C / 77 °F	

Other information

Metal Corrosivity

Steel Corrosion Rate Aluminum Corrosion Rate

No data available No data available

Volatile Organic Compounds (VOC) Content

Chemical name	CAS No	Volatile organic compounds (VOC) content	CAA (Clean Air Act)
N,N-Dimethylformamide	68-12-2	No data available	Х
Ammonium acetate	631-61-8	No data available	-
Poly(oxy-1,2-ethanediyl),	9036-19-5	Not applicable	-
.alpha[(1,1,3,3-tetramethylbutyl)phen			
yl]omegahydroxy-			

Explosive properties

Upper explosion limit Lower explosion limit	No data available No data available
Flammable properties	
Flash point Method	> 94 °C / 201.2 °F CC (closed cup)
Flammability Limit in Air Upper flammability limit: Lower flammability limit:	No data available No data available
Oxidizing properties	No data available.
Bulk density	No data available

10. STABILITY AND REACTIVITY

Reactivity

Not applicable.

<u>Chemical stability</u> Stability	Stable under normal conditions.
Explosion data Sensitivity to Mechanical Impact Sensitivity to Static Discharge	None None.
Possibility of hazardous reactions Possibility of Hazardous Reactions	None under normal processing.
Hazardous polymerization None under normal processing.	
Conditions to avoid Conditions to avoid	None known based on information supplied.
Incompatible materials Incompatible materials	Strong acids. Strong bases. Strong oxidizing agents.
Hazardous decomposition products	

Nitrogen oxides. Carbon dioxide. Carbon monoxide.

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Product Information

Inhalation	No known effect based on information supplied.			
Eye contact	Severely irritating to eyes. Causes serious eye damage. May cause burns. May cause irreversible damage to eyes.			
Skin contact	May cause irritation.			
Ingestion	Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea.			
Symptoms	Redness. Burning. May cause blindness.			

<u>Acute toxicity</u> Based on available data, the classification criteria are not met

Mixture

No data available.

Ingredient Acute Toxicity Data No data available.

Chemical name	Endpoint type	Reported dose	Exposure time	Toxicological effects	Key literature references and sources for data
N,N-Dimethylformami de (20 - 30%) CAS#: 68-12-2	Rat LD₅o	2800 mg/kg	None reported	None reported	IUCLID
Poly(oxy-1,2-ethaned iyl), .alpha[(1,1,3,3-tetra methylbutyl)phenyl] omegahydroxy- (10 - 13%)	LD50	1700 mg/kg	None reported	None reported	NITE

CAS#: 9036-19-5					
Chemical name	Endpoint	Reported	Exposure	Toxicological effects	Key literature references and
	type	dose	time		sources for data
N,N-Dimethylformami	Rat	1100 mg/kg	None reported	None reported	IUCLID
de	LD50				
(20 - 30%)					
CAS#: 68-12-2					
Chemical name	Endpoint	Reported	Exposure	Toxicological effects	Key literature references and
	type	dose	time		sources for data
N,N-Dimethylformami	Rat	> 5.9 mg/L	4 hours	None reported	IUCLID
de	LC50	-		- -	
(20 - 30%)					
CAS#: 68-12-2					

Unknown Acute Toxicity

0 % of the mixture consists of ingredient(s) of unknown toxicity.

0 % of the mixture consists of ingredient(s) of unknown acute oral toxicity

0 % of the mixture consists of ingredient(s) of unknown acute dermal toxicity

0 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (dust/mist)

0 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (vapor)

0 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (gas)

Acute Toxicity Estimations (ATE)

The following values are calculated based on chapter 3.1 of the GHS document

ATEmix (oral)	6,391.00
ATEmix (dermal)	4,073.00
ATEmix (inhalation-dust/mist)	5.60
ATEmix (inhalation-vapor)	41.00
ATEmix (inhalation-gas)	No information available

Skin corrosion/irritation

May cause skin irritation.

Mixture

Test data reported below.

Test method	<u>Species</u>	Reported dose	Exposure	<u>Results</u>
Standard Draize Test	Human	None reported	time	Mild skin irritant
			24 hours	

Ingredient Skin Corrosion/Irritation Data

No data available.

Chemical name	Test method	Species	Reported dose	Exposure time	Results	Key literature references and sources for data
N,N-Dimethylformami de (20 - 30%) CAS#: 68-12-2	Standard Draize Test	Human	1000 mg	None reported	Mild skin irritant	RTECS
Poly(oxy-1,2-ethaned iyl), .alpha[(1,1,3,3-tetra methylbutyl)phenyl] omegahydroxy- (10 - 13%) CAS#: 9036-19-5	Existing human experience	Human	None reported	None reported	Not corrosive or irritating to skin	Vendor SDS

Serious eye damage/eye irritation

Classification based on data available for ingredients. Causes burns. Risk of serious damage to eyes.

Mixture

No data available.

Species

Ingredient Eye Damage/Eye Irritation Data No data available.

Chemical name	Test method	Species	Reported dose	Exposure time	Results	Key literature references and sources for data
N,N-Dimethylformami de (20 - 30%) CAS#: 68-12-2	Rinse Test	Rabbit	100 mg	None reported	Corrosive to eyes	RTECS
Poly(oxy-1,2-ethaned iyl), .alpha[(1,1,3,3-tetra methylbutyl)phenyl] omegahydroxy- (10 - 13%) CAS#: 9036-19-5	Standard Draize Test	Rabbit	100 mg	72 hours	Corrosive to eyes	RTECS

Respiratory or skin sensitization

Based on available data, the classification criteria are not met.

Mixture

No data available.

Ingredient Sensitization Data

No data available.

Chemical name	Test method	Species	Results	Key literature references and sources for data
N,N-Dimethylformami de (20 - 30%) CAS#: 68-12-2	OECD Test No. 406: Skin Sensitization	Guinea pig	Not confirmed to be a skin sensitizer	IUCLID

STOT - single exposure

Based on available data, the classification criteria are not met.

Mixture

No data available.

Ingredient Specific Target Organ Toxicity Single Exposure Data No data available.

STOT - repeated exposure

Based on available data, the classification criteria are not met.

Mixture

No data available.

Ingredient Specific Target Organ Toxicity Repeat Exposure Data No data available.

Carcinogenicity

Based on available data, the classification criteria are not met.

Mixture

No data available.

Ingredient Carcinogenicity Data No data available.

Chemical name	CAS No	ACGIH	IARC	NTP	OSHA
N,N-Dimethylformamide	68-12-2	A3	Group 2A	-	Х
Ammonium acetate	631-61-8	-	-	-	-
Poly(oxy-1,2-ethanediyl), .alpha[(1,1,3,3-tetrameth		-	-	-	-
ylbutyl)phenyl]omegahy droxy-					

Legend

ACGIH (American Conference of Governmental Industrial Hygienists)	Does not apply
IARC (International Agency for Research on Cancer)	Group 3 - Not classifiable as a human
	carcinogen
	Group 2A - Probably Carcinogenic to
	Humans
NTP (National Toxicology Program)	Does not apply
OSHA	X - Present

<u>Germ cell mutagenicity</u> Based on available data, the classification criteria are not met.

Mixture invitro Data No data available.

Substance invitro Data

No data available.

Chemical name	Test	Cell Strain	Reported dose	Exposure time	Results	Key literature references and sources for data
N,N-Dimethylformami de (20 - 30%) CAS#: 68-12-2	Mutation in microorganisms	Salmonella typhimurium	None reported	None reported	Negative	RTECS
Poly(oxy-1,2-ethaned iyl), .alpha[(1,1,3,3-tetra methylbutyl)phenyl] omegahydroxy- (10 - 13%) CAS#: 9036-19-5	DNA inhibition	Human lymphocyte	5 mg/L	None reported	Positive test result for mutagenicity	RTECS

Mixture invivo Data No data available.

Substance invivo Data

No data available.

Chemical name	Test	Species	Reported dose	Exposure time	Results	Key literature references and sources for data
Poly(oxy-1,2-ethaned iyl), .alpha[(1,1,3,3-tetra methylbutyl)phenyl] omegahydroxy- (10 - 13%) CAS#: 9036-19-5	None reported	Rat	10200 mg/kg	None reported	Positive test result for mutagenicity	Vendor SDS
Reproductive toxicity	<u>/</u>					

Classification based on data available for ingredients. Contains a known or suspected reproductive toxin. The table below indicates ingredients above the cut-off threshold considered as relevant which are listed as reproductive toxins.

Mixture

No data available.

Ingredient Reproductive Toxicity Data

No data available.

Chemical name	Endpoint type	Reported dose	Exposure time	Toxicological effects	Key literature references and sources for data
N,N-Dimethylformami de (20 - 30%) CAS#: 68-12-2	Mouse TDLo	50 mg/L	6 hours	Paternal Effects Spermatogenesis (including genetic material, sperm morphology, motility, and count)	RTECS

Aspiration hazard

Based on available data, the classification criteria are not met.

12. ECOLOGICAL INFORMATION

Ecotoxicity

Toxic to aquatic life with long lasting effects

Unknown Acute Toxicity

0 % of the mixture consists of component(s) of unknown hazards to the aquatic environment.

<u>Mixture</u>

Aquatic Acute Toxicity No data available.

Aquatic Chronic Toxicity No data available.

Substance

Aquatic Acute Toxicity No data available.

NO Gala available.

Chemical name	Exposure time	Species	Endpoint type	Reported dose	Key literature references and sources for data
N,N-Dimethylformami de (20 - 30%) CAS#: 68-12-2	96 hours	Lepomis macrochirus	LC ₅₀	7100 mg/L	PEEN
Poly(oxy-1,2-ethaned iyl), .alpha[(1,1,3,3-tetra methylbutyl)phenyl] omegahydroxy- (10 - 13%) CAS#: 9036-19-5	96 hours	Lepomis macrochirus	LC ₅₀	>= 10 mg/L	Vendor SDS
Chemical name	Exposure time	Species	Endpoint type	Reported dose	Key literature references and sources for data
N,N-Dimethylformami de (20 - 30%) CAS#: 68-12-2	48 Hours	Daphnia magna	EC ₅₀	7500 mg/L	PEEN
Poly(oxy-1,2-ethaned iyl), .alpha[(1,1,3,3-tetra methylbutyl)phenyl]	48 Hours	Daphnia magna	EC ₅₀	>= 18 mg/L	ERMA

omegahydroxy- (10 - 13%) CAS#: 9036-19-5 Chemical name	Exposure time	Species	Endpoint type	Reported dose	Key literature references and sources for data
N,N-Dimethylformami de (20 - 30%) CAS#: 68-12-2		Scenedesmus subspicatus	EC ₅₀	> 500 mg/L	PEEN
Poly(oxy-1,2-ethaned iyl), .alpha[(1,1,3,3-tetra methylbutyl)phenyl] omegahydroxy- (10 - 13%) CAS#: 9036-19-5		Selenastrum sp.	EC50	0.21 mg/L	Vendor SDS

Aquatic Chronic Toxicity No data available.

Chemical name	Exposure time	Species	Endpoint type	Reported dose	Key literature references and sources for data
Poly(oxy-1,2-ethaned iyl), .alpha[(1,1,3,3-tetra methylbutyl)phenyl] omegahydroxy- (10 - 13%) CAS#: 9036-19-5		Oncorhynchus mykiss	NOEC	0.004 mg/L	EPA

Persistence and degradability

Mixture

No data available.

Bioaccumulation

There is no data for this product. Mixture No data available.

Partition Coefficient (n-octanol/water)

Mobility

Soil Organic Carbon-Water Partition Coefficient

Other adverse effects

No information available

Chemical name	EU - Endocrine Disrupters Candidate List	EU - Endocrine Disrupters - Evaluated Substances	Endocrine disrupting potential
N,N-Dimethylformamide (20 - 30%) CAS#: 68-12-2	Group III Chemical	-	-
Poly(oxy-1,2-ethanediyl), .alpha[(1,1,3,3-tetramethylbutyl)phen yl]omegahydroxy- (10 - 13%) CAS#: 9036-19-5	Group III Chemical	-	-

13. DISPOSAL CONSIDERATIONS

Not applicable

Not applicable

Waste treatment methods

Waste from residues/unused products

Dispose of in accordance with local regulations. Dispose of waste in accordance with environmental legislation.

Contaminated packaging

Do not reuse empty containers.

14. TRANSPORT INFORMATION

<u>Transport Canada</u> UN/ID no Proper shipping name DOT Technical Name Transport hazard class(es) Packing Group Reportable Quantity (RQ) Emergency Response Guide Number	UN3082 Environmentally hazardous substance, liquid, n.o.s. Octylphenol ethoxylate 9 III Ammonium acetate: RQ kg= 11287.92, Dimethylformamide: RQ kg= 168.09 171
TDG UN/ID no Proper shipping name TDG Technical Name Transport hazard class(es) Packing Group Description	UN3082 Environmentally hazardous substance, liquid, n.o.s. Octylphenol ethoxylate 9 III UN3082, Environmentally hazardous substance, liquid, n.o.s. (Octylphenol ethoxylate), 9, III
IATA UN number or ID number Proper shipping name IATA Technical Name Transport hazard class(es) Packing group ERG Code Special precautions for user	UN3082 Environmentally hazardous substance, liquid, n.o.s. Octylphenol ethoxylate 9 III 9L A97, A158
IMDG UN number or ID number Proper shipping name IMDG Technical Name Transport hazard class(es) Packing Group EmS-No Special precautions for user	UN3082 Environmentally hazardous substance, liquid, n.o.s. Octylphenol ethoxylate 9 III F-A, S-F 274, 335

Additional information

There is a possibility that this product could be contained in a reagent set or kit composed of various compatible dangerous goods. If the item is not in a reagent set or kit, the classification given above applies. If the item is part of a reagent set or kit the classification would change to the following:

UN3316 Chemical Kit, Hazard Class 9, Packing Group II or III.

If the item is not regulated, the Chemical Kit classification does not apply.

15. REGULATORY INFORMATION

Regulatory information

National Inventories	
DSL/NDSL	

Complies

DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List

International Inventories	
TSCA	Complies
EINECS/ELINCS	Complies
ENCS	Does not comply
IECSC	Complies
KECL - Existing substances	Does not comply
PICCS	Does not comply
TCSI	Complies
AICS	Complies
NZIoC	Complies

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory

EINECS/ELINCS - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances

ENCS - Japan Existing and New Chemical Substances

IECSC - China Inventory of Existing Chemical Substances

KECL - Korean Existing and Evaluated Chemical Substances

PICCS - Philippines Inventory of Chemicals and Chemical Substances

TCSI - Taiwan Chemical Substances Inventory

AICS - Australian Inventory of Chemical Substances

NZIOC - New Zealand Inventory of Chemicals

Canada - CEPA - Mercury Containing Products None

International Regulations

The Montreal Protocol on Substances that Deplete the Ozone Layer	Not applicable
The Stockholm Convention on Persistent Organic Pollutants	Not applicable
The Rotterdam Convention	Not applicable

16. OTHER INFORMATION

Special Comments

NFPA and HMIS Classifications

NFPA	Health hazards - 3	Flammability - 1	Instability - 0	Physical and chemical properties -
HMIS	Health hazards - 3 - *	Flammability - 1	Physical hazards - 0	Personal protection - X

Key or legend to abbreviations and acronyms used in the safety data sheet

ACGIH ATSDR	ACGIH (American Conference of Governmental Industrial Hygienists) ATSDR (Agency for Toxic Substances and Disease Registry)
CCRIS	CCRIS (Chemical Carcinogenesis Research Information System)
CDC	CDC (Center for Disease Control)
CEPA	CEPA (Canadian Environmental Protection Agency)
CICAD	CICAD (Concise International Chemical Assessment Documents)
ECHA	ECHA (The European Chemicals Agency)
EEA	EEA (European Environment Agency)
EPA	EPA (Environmental Protection Agency)
ERMA	ERMA (New Zealands Environmental Risk Management Authority)
ECOSARS	

	Estimation through ECOSARS v1.11 part of the Estimation Programs Interface (EPI) Suite™
FDA	FDA (Food & Drug Administration)
GESTIS	GESTIS (Information System on Hazardous Substances of the German Social Accident Insurance)
HSDB	HSDB (Hazardous Substances Data Bank)
INERIS	INERIS (The National Industrial Environment and Risks Institute)
IPCS INCHEM	IPCS INCHEM (International Programme on Chemical Safety)
IUCLID	IUCLID (The International Uniform Chemical Information Database)
NITE	Japan National Institute of Technology and Evaluation (NITE)
NIH	NIH (National Institutes of Health)
NIOSH	NIOSH (National Institute for Occupational Safety and Health)
LOLI	LOLI (List of Lists - An International Chemical Regulatory Database)
NDF	no data
NICNAS	Australia National Industrial Chemicals Notification and Assessment Scheme (NICNAS)
NIOSH IDLH	Immediately Dangerous to Life or Health
OSHA	OSHA (Occupational Safety and Health Administration of the US Department of Labor)
PEEN	PEEN (Pan European Ecological Network)
RTECS	RTECS (Registry of Toxic Effects of Chemical Substances)
SIDS	SIDS (Screening Information Dataset) for High Volume Chemicals
SYKE	The Finnish Environment Institute (SYKE)
USDA	USDA (United States Department of Agriculture)
USDC	USDC (United States Department of Commerce)
WHO	WHO (World Health Organization)

Legend - Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

TWA	TWA (time-weighted average)		STEL	STEL (Short Term Exposure Limit)
MAC	Maximum Allowable Concentration		Ceiling	Ceiling Limit Value
Х	Listed		Vacated	These values have no official status. The only binding levels of contaminants are those listed in the final OSHA PEL. These lists are for reference purposes only. Please note that some reference state regulations of these "liberated" exposure limits in their state regulations.
SKN* RSP+ C M	Skin designation Respiratory sensit Carcinogen mutagen	ization	SKN+ ** R	Skin sensitization Hazard Designation Reproductive toxicant
Prepared By		Hach Product Compliance Department		
Issue Date		05-May-2020		
Revision Date		23-May-2023		
Revision Note SDS sections upd	ated			

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<u>Disclaimer</u>

USER RESPONSIBILITY: Each user should read and understand this information and incorporate it in individual site safety programs in accordance with applicable hazard communication standards and regulations.

THE INFORMATION CONTAINED HEREIN IS BASED ON DATA CONSIDERED TO BE ACCURATE. HOWEVER, NO WARRANTY IS EXPRESSED OR IMPLIED REGARDING THE ACCURACY OF THESE DATA OR THE RESULTS TO BE OBTAINED FROM THE USE THEREOF.

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End of Safety Data Sheet