

# SAFETY DATA SHEET

Issue Date 07-Oct-2018	Revision Date 02-Jan-2019	Version 1.3				
	1. Identification					
Product identifier	Product identifier					
Product Name	Ferric Chloride - Sulfuric Acid Solution for Volatile A	Acids				
Other means of identification						
Product Code(s)	204253					
Recommended use of the chemic	al and restrictions on use					
Recommended Use	Laboratory reagent. Determination of volatile acids.					
Restrictions on use	For Laboratory Use Only.					
Uses advised against	s advised against Consumer use					
Details of the supplier of the safety data sheet						
Manufacturer Address Hach Company P.O.Box 389 Loveland, CO 80539 USA +1(970) 669-3050						
Emergency telephone number						
Emergency Telephone	+1(303) 623-5716 - 24 Hour Service					

# 2. Hazards identification

## **Classification**

Corrosive to metals	Category 1 - (H290)
Skin corrosion/irritation	Category 1 - (H314)
Serious eye damage/eye irritation	Category 1 - (H318)

# Label elements

Signal word - Danger

Hazard statements H290 - May be corrosive to metals H314 - Causes severe skin burns and eye damage



Corrosion

# **Precautionary statements**

P260 - Do not breathe dust/fume/gas/mist/vapors/spray

P280 - Wear protective gloves/protective clothing/eye protection/face protection

P301 + P330 + P331 - IF SWALLOWED: Rinse mouth. Do NOT induce vomiting

P303 + P361 + P353 - IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or shower]

P304 + P340 - IF INHALED: Remove person to fresh air and keep comfortable for breathing

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

P363 - Wash contaminated clothing before reuse

P405 - Store locked up

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

P234 - Keep only in original packaging

P390 - Absorb spillage to prevent material damage

## Other Hazards Known

Not applicable

# 3. Composition/information on ingredients

Substance

Not applicable.

Mixture

Chemical Family

Mixture.

Chemical nature

Aqueous solution of inorganic acids and salts.

Chemical name	CAS No.	Synonyms	Percent Range
Sulfuric acid	7664-93-9	Oil of vitriol	1 - 5%
Iron trichloride	7705-08-0	Ferric Chloride	1 - 5%

# 4. First aid measures

Description of first aid measures	
General advice	Show this safety data sheet to the doctor in attendance. Immediate medical attention is required.
Inhalation	Remove to fresh air. If breathing has stopped, give artificial respiration. Get medical attention immediately. Do not use mouth-to-mouth method if victim ingested or inhaled the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. If breathing is difficult, (trained personnel should) give oxygen. Delayed pulmonary edema may occur. Get immediate medical advice/attention.
Eye contact	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. Get immediate medical advice/attention.			
Skin contact	Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Get immediate medical advice/attention.			
Ingestion	Clean mouth with water and drink afterwards plenty of water. Never give anything by mouth to an unconscious person. Do NOT induce vomiting. Get immediate medical advice/attention.			
Self-protection of the first aider	Avoid contact with skin, eyes or clothing. Wear personal protective clothing (see section 8). Ensure that medical personnel are aware of the material(s) involved, take precautions to protect themselves and prevent spread of contamination. Avoid direct contact with skin. Use barrier to give mouth-to-mouth resuscitation.			
Most important symptoms and effe	ects, both acute and delayed			
Symptoms	Burning sensation.			
Indication of any immediate medical attention and special treatment needed				
Note to physicians	Product is a corrosive material. Use of gastric lavage or emesis is contraindicated. Possible perforation of stomach or esophagus should be investigated. Do not give chemical antidotes. Asphyxia from glottal edema may occur. Marked decrease in blood			

pressure may occur with moist rales, frothy sputum, and high pulse pressure.

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	The product causes burns of eyes, skin and mucous membranes. Thermal decomposition can lead to release of irritating gases and vapors.		
Hazardous combustion products	iron oxide. Sulfur oxides.		
Explosion data Sensitivity to mechanical impac Sensitivity to static discharge	ct None. None.		
Special protective actions 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

Personal precautions	Avoid contact with skin, eyes or clothing. Ensure adequate ventilation. Use personal protective equipment as required. Attention! Corrosive material. Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak.
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. Should not be released into the environment. Do not allow to enter into soil/subsoil. Prevent product from entering drain	
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. In case of insufficient ventilation, wear suitable respiratory equipment. Handle product only in closed system or provide appropriate exhaust ventilation. Do not eat, drink or smoke when using this product. Take off contaminated clothing and wash before reuse.

# Conditions for safe storage, including any incompatibilities

Storage Conditions	Keep containers tightly closed in a dry, cool and well-ventilated place. Protect from
	moisture. Store locked up. Keep out of the reach of children. Store away from other
	materials.

# 8. Exposure controls/personal protection

## Control parameters

## Exposure Limits

Based on NOM-010-STPS-2014.

Chemical name	TWA	STEL	Ceiling Limit Value
Sulfuric acid 7664-93-9	0.2 mg/m <sup>3</sup>	-	-
Iron trichloride 7705-08-0	1 mg/m³	2 mg/m³	-

# Appropriate engineering controls

Engineering controls Showers Eyewash stations Ventilation systems.

# Individual protection measures, such as personal protective equipment

Eye/face protection	Face protection shield.
Hand protection	Wear suitable gloves. Impervious gloves.
Skin and body protection	Wear suitable protective clothing. Long sleeved clothing. Chemical resistant apron.
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.

**General hygiene considerations** 

Wear suitable gloves and eye/face protection. Do not eat, drink or smoke when using this product. Regular cleaning of equipment, work area and clothing is recommended. Avoid contact with skin, eyes or clothing. Remove and wash contaminated clothing and gloves, including the inside, before re-use. Contaminated work clothing should not be allowed out of the workplace. Wash hands before breaks and immediately after handling the product.

# 9. Physical and chemical properties

# Information on basic physical and chemical properties

Physical state Appearance Odor	aqueous solution Not determined	Liquid		Color Odor threshold	yellow No data ava	ilable	
Property_			Values			Remarks • Method	
Molecular weight	:		No data available				
рН		0.5					
Melting point/free	ezing point		~ -2.78 °C / 27 °F				
Boiling point / boiling range		100 °C / 212 °F					
Evaporation rate		1.02 (water = 1)					
Vapor pressure		23.552 mm Hg / 3.14 kPa at 25 °C / 77 °F					
Vapor density (air = 1)		0.03 (air = 1)					
Specific gravity (water = 1 / air = 1)		1.039					
Partition Coeffici	ent (n-octanol/wate	er)	Not applicable				
	oon-Water Partition	ı	Not applicable				
Coefficient Autoignition temperature		No data available					
Decomposition temperature		No data available					
Dynamic viscosit	y		No data availat	ble			
Kinematic viscos	ity		No data availat	ble			

## 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**

Classified as corrosive to metal according to GHS criteria

# Steel Corrosion Rate Aluminum Corrosion Rate

40.89 mm/yr / 1.61 in/yr 257.81 mm/yr / 10.15 in/yr

Volatile Organic Compounds (VOC) Content

Chemical name	CAS No.	Volatile organic compounds (VOC) content	CAA (Clean Air Act)
Sulfuric acid	7664-93-9	No data available	-
Iron trichloride	7705-08-0	No data available	-

#### **Explosive properties**

Upper explosion limit Lower explosion limit	No data available No data available
Flammable properties	
Flash point	No data available
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	No information available.
Chemical stability	Stable under normal conditions.
Possibility of Hazardous Reactions	None under normal processing.
Hazardous polymerization	Hazardous polymerization does not occur.
Conditions to avoid	Exposure to air or moisture over prolonged periods.
Incompatible materials	Oxidizing agent. Acids. Bases.

Hazardous Decomposition Products Thermal decomposition can lead to release of irritating and toxic gases and vapors.

# **11. Toxicological information**

# Information on Likely Routes of Exposure

# Product Information

Inhalation

Corrosive by inhalation. Inhalation of corrosive fumes/gases may cause coughing, choking, headache, dizziness, and weakness for several hours. Pulmonary edema may occur with tightness in the chest, shortness of breath, bluish skin, decreased blood pressure, and increased heart rate. Inhaled corrosive substances can lead to a toxic edema of the lungs. Pulmonary edema can be fatal.

Eye contact	Causes burns. Corrosive to the eyes and may cause severe damage including blindness. Causes serious eye damage. May cause irreversible damage to eyes.
Skin contact	Corrosive. Causes severe burns. Avoid contact with skin and clothing.
Ingestion	Causes burns. Ingestion causes burns of the upper digestive and respiratory tracts. May cause severe burning pain in the mouth and stomach with vomiting and diarrhea of dark blood. Blood pressure may decrease. Brownish or yellowish stains may be seen around the mouth. Swelling of the throat may cause shortness of breath and choking. May cause lung damage if swallowed. May be fatal if swallowed and enters airways.
Symptoms	Redness. Burning. May cause blindness. Coughing and/ or wheezing.

# Acute toxicity

Based on available data, the classification criteria are not met

#### **Product Acute Toxicity Data**

No data available.

#### Ingredient Acute Toxicity Data

Test data reported below.

Chemical name	Endpoint type	Reported dose	Exposure time	Toxicological effects	Key literature references and sources for data
Iron trichloride (1 - 5%) CAS#: 7705-08-0	Rat LD₅₀	316 mg/kg	None reported	None reported	RTECS (Registry of Toxic Effects of Chemical Substances)

#### 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)	19,268.00
ATEmix (dermal)	No information available
ATEmix (inhalation-dust/mist)	No information available
ATEmix (inhalation-vapor)	No information available
ATEmix (inhalation-gas)	No information available

#### Skin corrosion/irritation

Causes severe burns.

# **Product Skin Corrosion/Irritation Data**

No data available.

#### 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
Sulfuric acid (1 - 5%) CAS#: 7664-93-9	Existing human experience	Human	None reported	None reported	Corrosive to skin	HSDB (Hazardous Substances Data Bank)

## Serious eye damage/eye irritation

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

## Product Serious Eye Damage/Eye Irritation Data

No data available.

#### 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
Sulfuric acid (1 - 5%) CAS#: 7664-93-9	Existing human experience	Human	None reported	None reported	Corrosive to eyes	HSDB (Hazardous Substances Data Bank)

#### **Respiratory or skin sensitization**

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

#### Product Sensitization Data

No data available.

#### Ingredient Sensitization Data

No data available.

#### STOT - single exposure

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

#### **Product Specific Target Organ Toxicity Single Exposure Data** No data available.

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

Chemical name	Endpoint type	Reported dose	Exposure time	Toxicological effects	Key literature references and sources for data
Iron trichloride (1 - 5%) CAS#: 7705-08-0	Woman LD⊾₀	4 mg/kg	None reported	Lungs, Thorax, or Respiration Dyspnea Gastrointestinal Nausea or vomiting Nutritional and Gross Metabolic Metabolic acidosis	RTECS (Registry of Toxic Effects of Chemical Substances)
Chemical name	Endpoint type	Reported dose	Exposure time	Toxicological effects	Key literature references and sources for data
Sulfuric acid	Human	0.144 mg/L	5 minutes	Lungs, Thorax, or	RTECS (Registry of Toxic
(1 - 5%)	TDLo			Respiration	Effects of Chemical
CAS#: 7664-93-9				Dyspnea	Substances)

#### STOT - repeated exposure

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

#### **Product Specific Target Organ Toxicity Repeat Dose Data** No data available.

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

Chemical name	Endpoint type	Reported dose	Exposure time	Toxicological effects	Key literature references and sources for data
Iron trichloride (1 - 5%)	Rat TD∟₀	7728 mg/kg	210 days	<b>Behavioral</b> Fluid intake	RTECS (Registry of Toxic Effects of Chemical

CAS#: 7705-08-0				Biochemical Enzyme inhibition, induction, or change in blood or tissue levels (true cholinesterase) Blood Changes in blood leukocyte	
Chemical name	Endpoint	Reported	Exposure	count Toxicological effects	Key literature references and
	type	dose	time		sources for data
Sulfuric acid	Human	.003 mg/L	168 days	Musculoskeletal	RTECS (Registry of Toxic
(1 - 5%)	TCLO	Ũ		Changes in teeth and	Effects of Chemical
CAS#: 7664-93-9				supporting structures	Substances)

Carcinogenicity

# **Product Carcinogenicity Data**

No data available.

# Ingredient Carcinogenicity Data No data available.

Chemical name	CAS No.	ACGIH	IARC	NTP	OSHA
Sulfuric acid	7664-93-9	A2	Group 1	Known	Х
Iron trichloride	7705-08-0	-	-	-	-

# Legend

ACGIH (American Conference of Governmental Industrial Hygienists)	A2 - Suspected Human Carcinogen
IARC (International Agency for Research on Cancer)	Group 1 - Carcinogenic to Humans
NTP (National Toxicology Program)	Known - Known Carcinogen
OSHA (Occupational Safety and Health Administration of the US Department of	X - Present
Labor)	

## Germ cell mutagenicity

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

#### Product Germ Cell Mutagenicity invitro Data

No data available.

## Ingredient Germ Cell Mutagenicity invitro Data

No data available.

Chemical name	Test	Cell Strain	Reported dose	Exposure time	Results	Key literature references and sources for data
Sulfuric acid (1 - 5%) CAS#: 7664-93-9	Cytogenetic analysis	Hamster ovary	4 mmol/L	None reported	Positive test result for mutagenicity	No information available
Iron trichloride (1 - 5%) CAS#: 7705-08-0	DNA inhibition	Human lymphocyte	4800 mmol/L	None reported	Positive test result for mutagenicity	RTECS (Registry of Toxic Effects of Chemical Substances)

# Product Germ Cell Mutagenicity invivo Data

No data available.

# Ingredient Germ Cell Mutagenicity invivo Data

No data available.

# Reproductive toxicity

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

#### **Product Reproductive Toxicity Data** No data available.

Ingredient Reproductive Toxicity Data

No data available.

Γ	Chemical name	Endpoint	Reported	Exposure	Toxicological effects	Key literature references and
		type	dose	time		sources for data
	Sulfuric acid	Rabbit	.02 mg/L	7 hours	Specific Developmental	No information available
	(1 - 5%)	TCLO	-		Abnormalities	
	CAS#: 7664-93-9				Musculoskeletal system	

## Aspiration hazard

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

# 12. Ecological information

#### Ecotoxicity

Unknown aquatic toxicity

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

# **Product Ecological Data**

#### **Aquatic Acute Toxicity** No data available.

#### **Aquatic Chronic Toxicity** No data available.

# Ingredient Ecological Data

# **Aquatic Acute Toxicity**

No data available.

Chemical name	Exposure time	Species	Endpoint type	Reported dose	Key literature references and sources for data
Iron trichloride (1 - 5%)	96 hours	Chlorella vulgaris	EC <sub>50</sub>	1421.3 mg/L	IUCLID (The International Uniform Chemical Information
CAS#: 7705-08-0					Database)

#### **Aquatic Chronic Toxicity** No data available.

## Persistence and degradability

**Product Biodegradability Data** No data available.

# **Bioaccumulation**

Product Bioaccumulation Data No data available.	
Partition Coefficient (n-octanol/water)	Not applicable
<u>Mobility</u>	
Soil Organic Carbon-Water Partition Coefficient	Not applicable
Other adverse effects No information available.	

# 13. Disposal considerations

#### Waste treatment methods

Waste from residues/unused	Dispose of in accordance with local regulations. Dispose of waste in accordance with
products	environmental legislation.

Contaminated packaging

# Do not reuse empty containers.

# 14. Transportation information

MEX UN/ID no Proper shipping name Hazard Class Packing Group Description	UN3264 Corrosive Liquid, Acidic, Inorganic, N.O.S. 8 II UN3264, Corrosive liquid, acidic, inorganic, n.o.s. (Sulfuric acid), 8, II
Note:	No special precautions necessary.
<u>TDG</u> UN/ID no Proper shipping name Hazard Class Packing Group Description	UN3264 Corrosive Liquid, Acidic, Inorganic, N.O.S. 8 II UN3264, Corrosive liquid, acidic, inorganic, n.o.s. (Sulfuric acid), 8, II
U.S. DOT UN/ID no Proper shipping name Hazard Class Packing Group Reportable Quantity (RQ) Special Provisions Description Emergency Response Guide Number	UN3264 Corrosive Liquid, Acidic, Inorganic, N.O.S. 8 II Sulfuric acid: RQ kg= 10900.36 B2, IB2, T11, TP2, TP27 UN3264, Corrosive liquid, acidic, inorganic, n.o.s. (Sulfuric acid), 8, II, RQ 154
ICAO (air) UN/ID no Proper shipping name Hazard Class Packing Group Special Provisions Description	UN3264 Corrosive Liquid, Acidic, Inorganic, N.O.S. 8 II A3 UN3264, Corrosive liquid, acidic, inorganic, n.o.s. (Sulfuric acid), 8, II
IATA UN/ID no Proper shipping name Hazard Class Packing Group ERG Code Special precautions for user	UN3264 Corrosive liquid, acidic, inorganic, n.o.s. 8 II 8L A3, A803
<u>IMDG</u> UN/ID no Proper shipping name	UN3264 Corrosive liquid, acidic, inorganic, n.o.s.

Hazard Class Packing Group EmS-No Special precautions for user	8 II F-A, S-B 274
<u>RID</u> UN/ID no Proper shipping name Hazard Class Packing Group Classification code Description	UN3264 Corrosive Liquid, Acidic, Inorganic, N.O.S. 8 II C1 UN3264, Corrosive liquid, acidic, inorganic, n.o.s. (Sulfuric acid), 8, II
ADR UN/ID no Proper shipping name Hazard Class Packing Group Classification code Tunnel restriction code Special precautions for user Description Labels	UN3264 Corrosive Liquid, Acidic, Inorganic, N.O.S. 8 II C1 (E) 274 UN3264, Corrosive liquid, acidic, inorganic, n.o.s. (Sulfuric acid), 8, II, (E) 8
ADN Proper shipping name Hazard Class Packing Group Classification code Special Provisions Description Hazard label(s) Limited quantity (LQ)	Corrosive Liquid, Acidic, Inorganic, N.O.S. 8 II C1 274 UN3264, Corrosive liquid, acidic, inorganic, n.o.s. (Sulfuric acid), 8, II 8 1 L

# 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

Safety, health and environmental regulations/legislation specific for the substance or mixture

## **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

International Inventories	
TSCA	Complies.
DSL/NDSL	Complies.
EINECS/ELINCS	Complies.
ENCS	Complies.
IECSC	Complies.
KECL	Complies.
PICCS	Complies.
AICS	Complies.

- **TSCA** United States Toxic Substances Control Act Section 8(b) Inventory
- DSL/NDSL Canadian Domestic Substances List/Non-Domestic Substances List
- 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
- AICS Australian Inventory of Chemical Substances

# 16. Other information

NFPA	Health hazards		Flammability		Instability 0	Physical and chemical properties			
<u>HMIS</u>	Health hazards	3	Flammability	0	Physical hazards 0	Personal protection X			
Key or legend to abbreviations and acronyms used in the safety data sheet									
TWA T	EXPOSURE CONTRO WA (time-weighted av laximum limit value		S	STEL	STEL (Short Terr Skin designation	n Exposure Limit)			
Ceiling       Maximum limit value       SKN*       Skin designation         Key literature references and sources for data used to compile the SDS       Agency for Toxic Substances and Disease Registry (ATSDR)         U.S. Environmental Protection Agency ChemView Database       European Food Safety Authority (EFSA)         EPA (Environmental Protection Agency)       Acute Exposure Guideline Level(s) (AEGL(s))         U.S. Environmental Protection Agency Federal Insecticide, Fungicide, and Rodenticide Act       U.S. Environmental Protection Agency Federal Insecticide, Fungicide, and Rodenticide Act         U.S. Environmental Protection Agency High Production Volume Chemicals       Food Research Journal         Hazardous Substance Database       International Uniform Chemical Information Database (IUCLID)         Japan GHS Classification       Australia National Industrial Chemicals Notification and Assessment Scheme (NICNAS)         NIOSH (National Institute for Occupational Safety and Health)       National Library of Medicine's ChemID Plus (NLM CIP)         National Library of Medicine's PubMed database (NLM PUBMED)       National Conomic Co-operation and Development Environment, Health, and Safety Publications         Organization for Economic Co-operation and Development High Production Volume Chemicals Program       Organization for Economic Co-operation and Development Screening Information Data Set         Organization for Economic Co-operation and Development High Production Volume Chemicals Program       Organization for Economic Co-operation and Development Screening									
Prepared By	Hac	h Produ	ct Compliance	Departmen	ıt.				
Issue Date	07-0	Oct-2018	3						
<b>Revision Date</b>	02-	Jan-2019	9						
The information is b									

The information is believed to be accurate, but it is not exhaustive and must be used only as guidance. It is based on the current state of knowledge of the chemical substance or mixture and is applicable to the appropriate safety precautions for the product.

## **Disclaimer**

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