

Creation Date 04-Jun-2009

Revision Date 03-Jan-2021

Revision Number 8

SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1. Product identifier

Product Description:	Sucrose
Cat No. :	S/8600/65, S/8600/70, S/8600/60, S/8600/63, S/8600/53, S/8600/68, SP/2971/70
Synonyms	Saccharose
CAS-No	57-50-1
EC-No.	200-334-9
Molecular Formula	C ₁₂ H ₂₂ O ₁₁

1.2. Relevant identified uses of the substance or mixture and uses advised against

Recommended Use	Laboratory chemicals.
Uses advised against	No Information available

1.3. Details of the supplier of the safety data sheet

Company	UK entity/business name Fisher Scientific UK Bishop Meadow Road, Loughborough, Leicestershire LE11 5RG, United Kingdom
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EU entity/business name Acros Organics BVBA Janssen Pharmaceuticaaan 3a 2440 Geel, Belgium
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E-mail address	begel.sdsdesk@thermofisher.com
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1.4. Emergency telephone number

Tel: 01509 231166
Chemtrec US: (800) 424-9300
Chemtrec EU: 001 (202) 483-7616

SECTION 2: HAZARDS IDENTIFICATION

2.1. Classification of the substance or mixture

CLP Classification - Regulation (EC) No 1272/2008

Physical hazards

Based on available data, the classification criteria are not met

Health hazards

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Based on available data, the classification criteria are not met

Environmental hazards

Based on available data, the classification criteria are not met

Full text of Hazard Statements: see section 16

2.2. Label elements

Hazard Statements

Precautionary Statements

2.3. Other hazards

No information available

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.1. Substances

Component	CAS-No	EC-No.	Weight %	CLP Classification - Regulation (EC) No 1272/2008
Sucrose	57-50-1	EEC No. 200-334-9	>95	-

Full text of Hazard Statements: see section 16

SECTION 4: FIRST AID MEASURES

4.1. Description of first aid measures

Eye Contact	Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Get medical attention.
Skin Contact	Wash off immediately with plenty of water for at least 15 minutes. Get medical attention immediately if symptoms occur.
Ingestion	Do NOT induce vomiting. Get medical attention.
Inhalation	Remove to fresh air. Get medical attention immediately if symptoms occur. If not breathing, give artificial respiration.
Self-Protection of the First Aider	No special precautions required.

4.2. Most important symptoms and effects, both acute and delayed

No information available.

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4.3. Indication of any immediate medical attention and special treatment needed

Notes to Physician Treat symptomatically.

SECTION 5: FIREFIGHTING MEASURES

5.1. Extinguishing media

Suitable Extinguishing Media

Water spray, carbon dioxide (CO₂), dry chemical, alcohol-resistant foam.

Extinguishing media which must not be used for safety reasons

No information available.

5.2. Special hazards arising from the substance or mixture

Thermal decomposition can lead to release of irritating gases and vapors.

Hazardous Combustion Products

Carbon monoxide (CO), Carbon dioxide (CO₂).

5.3. Advice for firefighters

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

Ensure adequate ventilation. Use personal protective equipment as required. Avoid dust formation.

6.2. Environmental precautions

Should not be released into the environment. See Section 12 for additional Ecological Information.

6.3. Methods and material for containment and cleaning up

Sweep up and shovel into suitable containers for disposal. Avoid dust formation.

6.4. Reference to other sections

Refer to protective measures listed in Sections 8 and 13.

SECTION 7: HANDLING AND STORAGE

7.1. Precautions for safe handling

Ensure adequate ventilation. Wash hands before breaks and immediately after handling the product. Avoid contact with skin, eyes or clothing. Avoid ingestion and inhalation. Avoid dust formation.

Hygiene Measures

Handle in accordance with good industrial hygiene and safety practice. Keep away from food, drink and animal feeding stuffs. Do not eat, drink or smoke when using this product. Remove and wash contaminated clothing and gloves, including the inside, before re-use. Wash hands before breaks and after work.

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7.2. Conditions for safe storage, including any incompatibilities

Keep containers tightly closed in a dry, cool and well-ventilated place.

Technical Rules for Hazardous Substances (TRGS) 510 Storage Class (LGK)
(Germany)

Class 11

7.3. Specific end use(s)

Use in laboratories

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Control parameters

Exposure limits

List source(s): **UK** - EH40/2005 Work Exposure Limits, Third edition. Published 2018. **IRE** - 2018 Code of Practice for the Chemical Agents Regulations, Schedule 1. Published by the Health and Safety Authority

Component	The United Kingdom	European Union	Ireland
Sucrose	STEL: 20 mg/m ³ 15 min TWA: 10 mg/m ³ 8 hr		TWA: 10 mg/m ³ 8 hr. STEL: 20 mg/m ³ 15 min

Biological limit values

This product, as supplied, does not contain any hazardous materials with biological limits established by the region specific regulatory bodies

Monitoring methods

BS EN 14042:2003 Title Identifier: Workplace atmospheres. Guide for the application and use of procedures for the assessment of exposure to chemical and biological agents.

MDHS14/3 General methods for sampling and gravimetric analysis of respirable and inhalable dust

Derived No Effect Level (DNEL) No information available

Route of exposure	Acute effects (local)	Acute effects (systemic)	Chronic effects (local)	Chronic effects (systemic)
Oral Dermal Inhalation				

Predicted No Effect Concentration (PNEC) No information available.

8.2. Exposure controls

Engineering Measures

None under normal use conditions.

Personal protective equipment

Eye Protection

Wear safety glasses with side shields (or goggles) (European standard - EN 166)

Hand Protection

Protective gloves

Glove material	Breakthrough time	Glove thickness	EU standard	Glove comments
Nitrile rubber	See manufacturers	-		(minimum requirement)

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Neoprene Natural rubber PVC	recommendations	EN 374
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Skin and body protection Wear appropriate protective gloves and clothing to prevent skin exposure

Inspect gloves before use.

Please observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves.

(Refer to manufacturer/supplier for information)

Ensure gloves are suitable for the task: Chemical compatibility, Dexterity, Operational conditions, User susceptibility, e.g. sensitisation effects, also take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion.

Remove gloves with care avoiding skin contamination.

Respiratory Protection No protective equipment is needed under normal use conditions.

Large scale/emergency use Use a NIOSH/MSHA or European Standard EN 136 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced

Recommended Filter type: Particle filter 2

Small scale/Laboratory use Maintain adequate ventilation

Environmental exposure controls No information available.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

Physical State	Solid	
Appearance	White	
Odor	Odorless	
Odor Threshold	No data available	
Melting Point/Range	190 - 192 °C / 374 - 377.6 °F	
Softening Point	No data available	
Boiling Point/Range	No information available	
Flammability (liquid)	Not applicable	Solid
Flammability (solid,gas)	No information available	
Explosion Limits	No data available	
Flash Point	No information available	Method - No information available
Autoignition Temperature	No data available	
Decomposition Temperature	No data available	
pH	6.5-7.5	(10%)
Viscosity	Not applicable	Solid
Water Solubility	1970 g/l (15°C)	
Solubility in other solvents	No information available	
Partition Coefficient (n-octanol/water)		
Component	log Pow	
Sucrose	-3.67	
Vapor Pressure	No information available	
Density / Specific Gravity	No data available	
Bulk Density	No data available	
Vapor Density	Not applicable	Solid
Particle characteristics	No data available	

9.2. Other information

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Molecular Formula C12 H22 O11
Molecular Weight 342.29
Evaporation Rate Not applicable - Solid

SECTION 10: STABILITY AND REACTIVITY

10.1. Reactivity None known, based on information available

10.2. Chemical stability Stable under normal conditions.

10.3. Possibility of hazardous reactions

Hazardous Polymerization Hazardous polymerization does not occur.
Hazardous Reactions None under normal processing.

10.4. Conditions to avoid Incompatible products. Excess heat. Avoid dust formation.

10.5. Incompatible materials Strong oxidizing agents.

10.6. Hazardous decomposition products Carbon monoxide (CO). Carbon dioxide (CO₂).

SECTION 11: TOXICOLOGICAL INFORMATION

11.1. Information on hazard classes as defined in Regulation (EC) No 1272/2008

Product Information See actual entry in RTECS for complete information.

(a) acute toxicity;
Oral Based on available data, the classification criteria are not met
Dermal No data available
Inhalation No data available

Component	LD50 Oral	LD50 Dermal	LC50 Inhalation
Sucrose	LD50 = 29700 mg/kg (Rat)	-	-

(b) skin corrosion/irritation; No data available

(c) serious eye damage/irritation; No data available

(d) respiratory or skin sensitization;
Respiratory No data available
Skin No data available

(e) germ cell mutagenicity; No data available

(f) carcinogenicity; No data available

The table below indicates whether each agency has listed any ingredient as a carcinogen

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- (g) reproductive toxicity; No data available
- (h) STOT-single exposure; No data available
- (i) STOT-repeated exposure; No data available
- Target Organs No information available.
- (j) aspiration hazard; Not applicable
Solid

Other Adverse Effects The toxicological properties have not been fully investigated.

Symptoms / effects, both acute and delayed No information available.

11.2. Information on other hazards

Endocrine Disrupting Properties Assess endocrine disrupting properties for human health. This product does not contain any known or suspected endocrine disruptors.

SECTION 12: ECOLOGICAL INFORMATION

12.1. Toxicity
Ecotoxicity effects Do not empty into drains.

12.2. Persistence and degradability Product is biodegradable
Persistence Persistence is unlikely.

12.3. Bioaccumulative potential Bioaccumulation is unlikely

Component	log Pow	Bioconcentration factor (BCF)
Sucrose	-3.67	No data available

12.4. Mobility in soil The product is water soluble, and may spread in water systems. Will likely be mobile in the environment due to its water solubility. Highly mobile in soils

12.5. Results of PBT and vPvB assessment No data available for assessment.

12.6. Endocrine disrupting properties
Endocrine Disruptor Information This product does not contain any known or suspected endocrine disruptors

12.7. Other adverse effects
Persistent Organic Pollutant This product does not contain any known or suspected substance
Ozone Depletion Potential This product does not contain any known or suspected substance

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SECTION 13: DISPOSAL CONSIDERATIONS

13.1. Waste treatment methods

Waste from Residues/Unused Products	Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. Consult local, regional, and national hazardous waste regulations to ensure complete and accurate classification.
Contaminated Packaging	Empty remaining contents. Dispose of in accordance with local regulations. Do not re-use empty containers.
European Waste Catalogue (EWC)	According to the European Waste Catalog, Waste Codes are not product specific, but application specific.
Other Information	Waste codes should be assigned by the user based on the application for which the product was used.

SECTION 14: TRANSPORT INFORMATION

IMDG/IMO Not regulated

14.1. UN number
14.2. UN proper shipping name
14.3. Transport hazard class(es)
14.4. Packing group

ADR Not regulated

14.1. UN number
14.2. UN proper shipping name
14.3. Transport hazard class(es)
14.4. Packing group

IATA Not regulated

14.1. UN number
14.2. UN proper shipping name
14.3. Transport hazard class(es)
14.4. Packing group

14.5. Environmental hazards No hazards identified

14.6. Special precautions for user No special precautions required

14.7. Maritime transport in bulk according to IMO instruments Not applicable, packaged goods

SECTION 15: REGULATORY INFORMATION

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

International Inventories

X = listed, Europe (EINECS/ELINCS/NLP), U.S.A. (TSCA), Canada (DSL/NDSL), Philippines (PICCS), China (IECSC), Japan (ENCS), Australia (AICS), Korea (ECL).

Component	EINECS	ELINCS	NLP	TSCA	DSL	NDSL	PICCS	ENCS	IECSC	AICS	KECL
Sucrose	200-334-9	-		X	X	-	X	-	X	X	KE-1725 8

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Regulation (EC) No 649/2012 of the European Parliament and of the Council of 4 July 2012 concerning the export and import of dangerous chemicals

Not applicable

National Regulations

WGK Classification

Water endangering class = 2 (self classification)

Component	Germany - Water Classification (VwVwS)	Germany - TA-Luft Class
Sucrose	WGK1	

UK - Take note of Control of Substances Hazardous to Health Regulations (COSHH) 2002 and 2005 Amendment

15.2. Chemical safety assessment

A Chemical Safety Assessment/Report (CSA/CSR) has not been conducted

SECTION 16: OTHER INFORMATION

Full text of H-Statements referred to under sections 2 and 3

Legend

CAS - Chemical Abstracts Service

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

PICCS - Philippines Inventory of Chemicals and Chemical Substances

IECSC - Chinese Inventory of Existing Chemical Substances

KECL - Korean Existing and Evaluated Chemical Substances

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

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

ENCS - Japanese Existing and New Chemical Substances

AICS - Australian Inventory of Chemical Substances

NZIoC - New Zealand Inventory of Chemicals

WEL - Workplace Exposure Limit

ACGIH - American Conference of Governmental Industrial Hygienists

DNEL - Derived No Effect Level

RPE - Respiratory Protective Equipment

LC50 - Lethal Concentration 50%

NOEC - No Observed Effect Concentration

PBT - Persistent, Bioaccumulative, Toxic

TWA - Time Weighted Average

IARC - International Agency for Research on Cancer Predicted No Effect Concentration (PNEC)

LD50 - Lethal Dose 50%

EC50 - Effective Concentration 50%

POW - Partition coefficient Octanol:Water

vPvB - very Persistent, very Bioaccumulative

ADR - European Agreement Concerning the International Carriage of Dangerous Goods by Road

IMO/MDG - International Maritime Organization/International Maritime Dangerous Goods Code

OECD - Organisation for Economic Co-operation and Development

BCF - Bioconcentration factor

ICAO/IATA - International Civil Aviation Organization/International Air Transport Association

MARPOL - International Convention for the Prevention of Pollution from Ships

ATE - Acute Toxicity Estimate

VOC (volatile organic compound)

Key literature references and sources for data

<https://echa.europa.eu/information-on-chemicals>

Suppliers safety data sheet, Chemadvisor - LOLI, Merck index, RTECS

Training Advice

Chemical hazard awareness training, incorporating labelling, Safety Data Sheets (SDS), Personal Protective Equipment (PPE) and hygiene.

Creation Date

04-Jun-2009

Revision Date

03-Jan-2021

Revision Summary

Update to CLP Format.

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**This safety data sheet complies with the requirements of Regulation (EC) No. 1907/2006
COMMISSION REGULATION (EU) 2020/878 amending Annex II to Regulation (EC) No
1907/2006**

Disclaimer

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text

End of Safety Data Sheet

Section 1. Chemical identification

Name: Sodium chloride

Section 2. Composition/information on ingredients

CAS #:7647-14-5

EINECS No.:231-598-3

MF: NaCl

Synonyms

Common salt, dendritis, halite, purex, rock salt, saline, salt, sea salt, table salt, top flake, white crystal.

Section 3. Hazards identification

Label precautionary statements

- Irritant.
- Irritating to the eyes, respiratory system and skin.
- In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
- Wear suitable protective clothing.



Irritant

Section 4. First aid measures

In case of eye contact, immediately flush eyes with copious amounts of water for at least 15 minutes. Assure adequate flushing of the eyes by separating the eyelids with fingers, and seek medical advice.

In case of skin contact, immediately flush skin with copious amounts of water for at least 15 minutes while removing contaminated clothing and shoes.

If inhaled, remove to fresh air. If not breathing give artificial respiration. If breathing is difficult give oxygen.

If swallowed, wash out mouth with water provided person is conscious. Call a physician. Do not induce vomiting.

Section 5. Fire fighting measures

Extinguishing media

- Non-combustible.
- Use extinguishing media appropriate to surrounding fire conditions.

Special fire fighting procedures

For fires involving sodium chloride do not enter any enclosed or confined space fire space without proper protective equipment. This may include self-contained breathing apparatus to protect against the hazardous effects of the normal products of combustion or oxygen deficiency.

When heated to decomposition it emits toxic fumes of oxides of chlorine and Na_2O .

Section 6. Accidental release measures

- Wear respirator, chemical safety goggles, rubber boots and heavy rubber gloves.
- Sweep up, place in a bag and hold for waste disposal.
- Avoid raising dust.
- Wash spill site after material pickup is complete.

Section 7. Handling and storage

Store in **GREY** area.

Refer to Section 8.

Additional information

Reacts violently with bromine trifluoride and lithium.

Section 8. Exposure controls/personal protection .

- Chemical safety goggles.
- Use protective clothing, gloves and mask.
- Safety shower and eye bath.
- Mechanical exhaust required.
- Do not breathe dust.
- Do not get in eyes, on skin, on clothing.
- Wash thoroughly after handling.
- Irritant.
- Keep tightly closed.
- Store in a cool dry place.



Goggles



Gloves



**Protective
clothing**



**Wash
hands**

Section 9. Physical and chemical properties

Appearance and odour

Colorless, transparent cubic crystals; or white, crystalline powder

Physical properties

Melting point:	801°C	Boiling point	1413°C
Vapour pressure:	1 mm @ 865°C	Specific gravity:	2.165

Section 10. Stability and reactivity

Incompatibilities

- Strong oxidising agents.
- Strong acids.
- Protect from moisture.

Hazardous combustion or decomposition products

Nature of decomposition products not known.

Section 11. Toxicological information

Acute effects

- May be harmful by inhalation, ingestion or skin absorption.
- Causes eye irritation.
- Causes skin irritation.
- May cause eye and skin irritation.
- Material is irritating to mucous membranes and upper respiratory tract.

Toxicity data

orl-rat LD₅₀:3 gm/kg

Target organ data

- Behavioural (somnolence) (convulsions or effect on seizure threshold) (muscle contraction or spasticity)
- Cardiac (other changes)
- Endocrine (estrogenic)
- Maternal effects (ovaries, fallopian tubes) (other effects on female)
- Effects on fertility (pre-implantation mortality) (post-implantation mortality) (abortion)
- Effects on embryo or foetus (fetotoxicity) (foetal death)

Section 12. Ecological information

Data not yet available.

Section 13. Disposal considerations

- Contact a licensed professional waste disposal service to dispose of this material.
- Observe all EU, Irish and local environmental regulations.

Section 14. Transport information

Contact chemical supplier for transportation information.

Section 15. Regulatory information

European information.

- **Irritant**

R36/37/38 Irritating to the eyes, respiratory system and skin.

S26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

S36 Wear suitable clothing.



Irritant

Section 16. Other information

This MSDS has been prepared in DkIT and is designed for Irish Second Level School Science Laboratories use only where quantities handled are less than 50g. The above information is believed to be correct but does not claim to be all inclusive and shall be used only as a guide. Every effort has been made to ensure that this information provided conforms with the latest available data. DkIT, the Department of Education & Science, Limerick Education Centre, Sigma, Aldrich, Fluka, Dr. Dunlevy or Ms. F. Dunlevy shall not be held liable for any information errors in this MSDS or for any damage resulting from handling or from contact with the above product.

Please address any comments or error observations to: brian.dunlevy@dkit.ie

REFERENCES

Sigma Aldrich Fluka MSDS CD-ROM, Sax CD-ROM, MSDS on Internet.



SAFETY DATA SHEET

COPPER (II) SULPHATE

Page: 1

Compilation date: 17/08/2012

Revision No: 1

Section 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Product name: COPPER (II) SULPHATE

CAS number: 7758-98-7

EINECS number: 231-847-6

Index number: 029-004-00-0

1.2. Relevant identified uses of the substance or mixture and uses advised against

Use of substance / mixture: Distribution of substance PC21: Laboratory chemicals.

1.3. Details of the supplier of the safety data sheet

Company name: LENNOX
JOHN F KENNEDY DRIVE
NAAS ROAD
DUBLIN 12
IRELAND

Tel: 01 4552201

Email: Sales@lennox.ie

1.4. Emergency telephone number

Section 2: Hazards identification

2.1. Classification of the substance or mixture

Classification under CLP: Acute Tox. 4: H302; Aquatic Chronic 1: H410; Eye Irrit. 2: H319; Skin Irrit. 2: H315; Aquatic Acute 1: H400

Classification under CHIP: Xn: R22; Xi: R36/38; N: R50/53

Most important adverse effects: Harmful if swallowed. Causes skin irritation. Causes serious eye irritation. Very toxic to aquatic life with long lasting effects.

2.2. Label elements

Label elements under CLP:

Hazard statements: H302: Harmful if swallowed.
H315: Causes skin irritation.
H319: Causes serious eye irritation.
H410: Very toxic to aquatic life with long lasting effects.

Signal words: Warning

Hazard pictograms: GHS07: Exclamation mark
GHS09: Environmental

[cont...]

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COPPER (II) SULPHATE

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Precautionary statements: P264: Wash hands thoroughly after handling.
P270: Do not eat, drink or smoke when using this product.
P280: Wear protective gloves/protective clothing/eye protection/face protection.
P273: Avoid release to the environment.
P301+310: IF SWALLOWED: Immediately call a POISON CENTER or doctor.
P305+351+338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P330: Rinse mouth.

2.3. Other hazards

PBT: This substance is not identified as a PBT substance.

Section 3: Composition/information on ingredients

3.1. Substances

Chemical identity: COPPER (II) SULPHATE

Section 4: First aid measures

4.1. Description of first aid measures

Skin contact: Remove all contaminated clothes and footwear immediately unless stuck to skin. Drench the affected skin with running water for 10 minutes or longer if substance is still on skin. Consult a doctor.

Eye contact: Bathe the eye with running water for 15 minutes. Consult a doctor.

Ingestion: Wash out mouth with water. Do not induce vomiting. If conscious, give half a litre of water to drink immediately. Consult a doctor.

Inhalation: Remove casualty from exposure ensuring one's own safety whilst doing so. Consult a doctor.

4.2. Most important symptoms and effects, both acute and delayed

Skin contact: There may be irritation and redness at the site of contact.

Eye contact: There may be irritation and redness. The eyes may water profusely.

Ingestion: There may be soreness and redness of the mouth and throat. Nausea and stomach pain may occur. There may be vomiting.

Inhalation: There may be irritation of the throat with a feeling of tightness in the chest.

Delayed / immediate effects: Immediate effects can be expected after short-term exposure.

4.3. Indication of any immediate medical attention and special treatment needed

Immediate / special treatment: Not applicable.

[cont...]

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COPPER (II) SULPHATE

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Section 5: Fire-fighting measures

5.1. Extinguishing media

Extinguishing media: Suitable extinguishing media for the surrounding fire should be used. Use water spray to cool containers.

5.2. Special hazards arising from the substance or mixture

Exposure hazards: In combustion emits toxic fumes.

5.3. Advice for fire-fighters

Advice for fire-fighters: Wear self-contained breathing apparatus. Wear protective clothing to prevent contact with skin and eyes.

Section 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Personal precautions: Refer to section 8 of SDS for personal protection details. If outside do not approach from downwind. If outside keep bystanders upwind and away from danger point. Mark out the contaminated area with signs and prevent access to unauthorised personnel.

6.2. Environmental precautions

Environmental precautions: Do not discharge into drains or rivers.

6.3. Methods and material for containment and cleaning up

Clean-up procedures: Transfer to a closable, labelled salvage container for disposal by an appropriate method.

6.4. Reference to other sections

Reference to other sections: Refer to section 8 of SDS.

Section 7: Handling and storage

7.1. Precautions for safe handling

Handling requirements: Avoid direct contact with the substance. Ensure there is sufficient ventilation of the area. Do not handle in a confined space. Avoid the formation or spread of dust in the air. PPE To be worn. See section 8.

7.2. Conditions for safe storage, including any incompatibilities

Storage conditions: Store in cool, well ventilated area. Keep container tightly closed. The floor of the storage room must be impermeable to prevent the escape of liquids.

7.3. Specific end use(s)

Specific end use(s): No data available.

[cont...]

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COPPER (II) SULPHATE

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Section 8: Exposure controls/personal protection

8.1. Control parameters

Workplace exposure limits:

Respirable dust

State	8 hour TWA	15 min. STEL	8 hour TWA	15 min. STEL
UK	1 mg/m ³	2 mg/m ³	-	-

8.2. Exposure controls

Engineering measures: Ensure there is sufficient ventilation of the area. The floor of the storage room must be impermeable to prevent the escape of liquids. Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of work day.

Respiratory protection: Self-contained breathing apparatus must be available in case of emergency. Respiratory protective device with particle filter. Use a full-face particle respirator type P3 (EN143)

Hand protection: Protective gloves. Glove material: Nitrile. Layer thickness:0.15mm. Breakthrough time:>480min. The selected protective gloves have to satisfy the specifications of EU Directive 89/686/EEC and the standard EN 374 derived from it.

Eye protection: Safety glasses. Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU). Ensure eye bath is to hand.

Skin protection: Wear appropriate clothing to prevent any possibility of skin contact.

Section 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

State: Powder

Colour: Light grey

Melting point/range°C: 200

Vapour pressure: 9.7 hPa @ 25°C

Relative density: 3.603 g/ml @25°C

9.2. Other information

Other information: Not applicable.

Section 10: Stability and reactivity

10.1. Reactivity

Reactivity: Stable under recommended transport or storage conditions.

10.2. Chemical stability

Chemical stability: Stable under normal conditions.

[cont...]

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10.3. Possibility of hazardous reactions

Hazardous reactions: Hazardous reactions will not occur under normal transport or storage conditions.
Decomposition may occur on exposure to conditions or materials listed below.

10.4. Conditions to avoid

Conditions to avoid: Heat.

10.5. Incompatible materials

Materials to avoid: Strong oxidising agents. Strong acids.

10.6. Hazardous decomposition products

Haz. decomp. products: In combustion emits toxic fumes.

Section 11: Toxicological information

11.1. Information on toxicological effects

Toxicity values:

Route	Species	Test	Value	Units
ORL	RAT	LD50	482	mg/kg
ORL	MUS	LD50	369	mg/kg
IVN	RAT	LD50	48900	µg/kg

Relevant hazards for substance:

Hazard	Route	Basis
Acute toxicity (ac. tox. 4)	ING	Based on test data
Skin corrosion/irritation	DRM	Based on test data
Serious eye damage/irritation	OPT	Based on test data

Symptoms / routes of exposure

Skin contact: There may be irritation and redness at the site of contact.

Eye contact: There may be irritation and redness. The eyes may water profusely.

Ingestion: There may be soreness and redness of the mouth and throat. Nausea and stomach pain may occur. There may be vomiting.

Inhalation: There may be irritation of the throat with a feeling of tightness in the chest.

Delayed / immediate effects: Immediate effects can be expected after short-term exposure.

Section 12: Ecological information

12.1. Toxicity

[cont...]

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Ecotoxicity values:

Species	Test	Value	Units
Daphnia magna-Immobilization	48H EC50	0.024	mg/l
Other Fish-Mortality	96H LC50	1-2.5	mg/l

12.2. Persistence and degradability

Persistence and degradability: Not biodegradable.

12.3. Bioaccumulative potential

Bioaccumulative potential: Bioaccumulation potential.

12.4. Mobility in soil

12.5. Results of PBT and vPvB assessment

PBT identification: This substance is not identified as a PBT substance.

12.6. Other adverse effects

Other adverse effects: Toxic to aquatic organisms. Toxic to soil organisms.

Section 13: Disposal considerations

13.1. Waste treatment methods

Disposal operations: Transfer to a suitable container and arrange for collection by specialised disposal company.

NB: The user's attention is drawn to the possible existence of regional or national regulations regarding disposal.

Section 14: Transport information

14.1. UN number

UN number: UN3077

14.2. UN proper shipping name

Shipping name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S.-(Copper Sulphate)

14.3. Transport hazard class(es)

Transport class: 9

14.4. Packing group

Packing group: III

14.5. Environmental hazards

Environmentally hazardous: Yes

Marine pollutant: Yes

[cont...]

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14.6. Special precautions for user

Special precautions: No special precautions.

Tunnel code: E

Transport category: 3

Section 15: Regulatory information

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

15.2. Chemical Safety Assessment

Chemical safety assessment: A chemical safety assessment has not been carried out for the substance or the mixture by the supplier.

Section 16: Other information

Other information

Phrases used in s.2 and 3: H302: Harmful if swallowed.

H315: Causes skin irritation.

H319: Causes serious eye irritation.

H410: Very toxic to aquatic life with long lasting effects.

R22: Harmful if swallowed.

R36/38: Irritating to eyes and skin.

R50/53: Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Legal disclaimer: The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. This company shall not be held liable for any damage resulting from handling or from contact with the above product.

Section 1. Chemical identification

Name: Potassium sodium tartrate tetrahydrate

Section 2. Composition/information on ingredients

CAS #:6381 59 5 EINECS No:206 156 8 MF: C₄H₄KNaO₆.4H₂O

Synonyms

Rochelle salt, L(+)-Tartaric acid Potassium Sodium, Seignette salt.

Section 3. Hazards identification

Label precautionary statements

Data not available.

Section 4. First aid measures

In case of eye contact, immediately flush eyes with copious amounts of water for at least 15 minutes. Assure adequate flushing of the eyes by separating the eyelids with fingers, and seek medical advice.

In case of skin contact, immediately flush skin with copious amounts of water for at least 15 minutes while removing contaminated clothing and shoes.

If inhaled, remove to fresh air. If not breathing give artificial respiration. If breathing is difficult give oxygen.

If swallowed, wash out mouth with water provided person is conscious. Call a physician. Do not induce vomiting.

Wash contaminated clothing before reuse.

Section 5. Fire fighting measures

Extinguishing media

Water spray, carbon dioxide, dry chemical powder or appropriate foam.

Special fire fighting procedures

Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes.

Chemical
Potassium Sodium Tartrate

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Unusual fire and explosions hazards

Emits toxic fumes under fire conditions.

Section 6. Accidental release measures

- Wear respirator, chemical safety goggles, rubber boots and heavy rubber gloves.
- Sweep up, place in a bag and hold for waste disposal.
- Avoid raising dust.
- Ventilate area and wash spill site after material pickup is complete.

Section 7. Handling and storage

Store in **GREY** area.

Refer to Section 8.

Section 8. Exposure controls/personal protection

- Chemical safety goggles.
- Compatible chemical-resistant gloves.
- Wear approved respirator EN149 in non-ventilated areas or for exposure above the OEL.
- Mechanical exhaust required.
- Avoid inhalation.
- Avoid contact with eyes, skin and clothing.
- Wash thoroughly after handling.
- Keep tightly closed.
- Store in a cool dry place.



Goggles



Gloves



Respirator



**Protective
clothing**



**Wash
hands**

Section 9. Physical and chemical properties

Appearance and odour

White crystals.

Section 10. Stability and reactivity

Stability

Stable.

Incompatibilities

Strong oxidizing agents,

Hazardous combustion or decomposition products

Toxic fumes of: carbon monoxide, carbon dioxide

Section 11. Toxicological information

Acute effects

- May be harmful by inhalation, ingestion, or skin absorption.
- May cause eye irritation.
- May cause skin irritation.
- Potassium sodium tartrate may be irritating to mucous membranes and upper respiratory tract.

Section 12. Ecological information

Data not yet available.

Section 13. Disposal considerations

- Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber.
- Observe all EU, Irish and local environmental regulations.

Section 14. Transport information

Contact chemical supplier for transportation information.

Section 15. Regulatory information

Data not available.

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Potassium Sodium Tartrate

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Section 16. Other information

This MSDS has been prepared in DkIT and is designed for Irish Second Level School Science Laboratories use only where quantities handled are less than 50g. The above information is believed to be correct but does not claim to be all inclusive and shall be used only as a guide. Every effort has been made to ensure that this information provided conforms with the latest available data. DkIT, the Department of Education & Science, Limerick Education Centre, Sigma, Aldrich, Fluka, Dr. Dunlevy or Ms. F. Dunlevy shall not be held liable for any information errors in this MSDS or for any damage resulting from handling or from contact with the above product.

Please address any comments or error observations to: brian.dunlevy@dkit.ie

REFERENCES

Sigma Aldrich Fluka MSDS CD-ROM, Sax CD-ROM, MSDS on Internet

SAFETY DATA SHEET

1. Identification

Product identifier: POTASSIUM PHOSPHATE MONOBASIC

Other means of identification

Product No.: 7390, 3248, 7746, 4008, 3247, 3246, 7100, 7096, 4921, 73257

Recommended use and restriction on use

Recommended use: Not available.

Restrictions on use: Not known.

Manufacturer/Importer/Supplier/Distributor information

Manufacturer

Company Name: Avantor Performance Materials, Inc.
Address: 3477 Corporate Parkway, Suite 200
Center Valley, PA 18034

Telephone: Customer Service: 855-282-6867

Fax:
Contact Person: Environmental Health & Safety
e-mail: info@avantormaterials.com

Emergency telephone number:

24 Hour Emergency: 908-859-2151

Chemtrec: 800-424-9300

2. Hazard(s) identification

Hazard classification

Health hazards

Acute toxicity (Oral)	Category 4
Serious eye damage/eye irritation	Category 2B

Label elements

Hazard symbol:



Signal word: Warning

Hazard statement: Harmful if swallowed.
Causes eye irritation.

Precautionary statement

Prevention: Wash thoroughly after handling. Do not eat, drink or smoke when using this product.

Response: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation

persists: Get medical advice/attention. IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell. Rinse mouth.

Disposal: Dispose of contents/container to an appropriate treatment and disposal facility in accordance with applicable laws and regulations, and product characteristics at time of disposal.

Other hazards which do not result in GHS classification: None.

3. Composition/information on ingredients

Substances

Chemical identity	Common name and synonyms	CAS number	Content in percent (%)*
POTASSIUM PHOSPHATE MONOBASIC		7778-77-0	98 - 100%

* All concentrations are percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.

4. First-aid measures

General information: Get medical advice/attention if you feel unwell. If medical advice is needed, have product container or label at hand.

Ingestion: Rinse mouth. Call a POISON CENTER or doctor/physician if you feel unwell.

Inhalation: Move to fresh air. Get medical attention if symptoms persist.

Skin contact: Wash skin thoroughly with soap and water. Get medical attention if symptoms occur. Wash contaminated clothing before reuse.

Eye contact: Immediately flush with plenty of water for at least 15 minutes. If easy to do, remove contact lenses. Get medical attention if irritation persists after washing.

Most important symptoms/effects, acute and delayed

Symptoms: Harmful if swallowed. Irritating to eyes, respiratory system and skin.

Indication of immediate medical attention and special treatment needed

Treatment: Treat symptomatically. Symptoms may be delayed.

5. Fire-fighting measures

General fire hazards: No unusual fire or explosion hazards noted.

Suitable (and unsuitable) extinguishing media

Suitable extinguishing media: Use fire-extinguishing media appropriate for surrounding materials.

Unsuitable extinguishing media: None known.

Specific hazards arising from the chemical: None known.

Special protective equipment and precautions for firefighters

Special fire fighting procedures:	Move containers from fire area if you can do so without risk. Use water spray to keep fire-exposed containers cool.
Special protective equipment for fire-fighters:	Firefighters must use standard protective equipment including flame retardant coat, helmet with face shield, gloves, rubber boots, and in enclosed spaces, SCBA.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures:	Keep unauthorized personnel away. Keep upwind. Ventilate closed spaces before entering them. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing.
Methods and material for containment and cleaning up:	Sweep up and place in a clearly labeled container for chemical waste. Avoid dust formation. Clean surface thoroughly to remove residual contamination.
Notification Procedures:	Inform authorities if large amounts are involved.
Environmental precautions:	Do not contaminate water sources or sewer. Prevent further leakage or spillage if safe to do so.

7. Handling and storage

Precautions for safe handling:	Avoid generation and spreading of dust. Avoid inhalation of high concentrations of dust. Do not get in eyes and avoid contact with skin and clothing. Wash thoroughly after handling. See Section 8 of the MSDS for Personal Protective Equipment. Use only with adequate ventilation.
Conditions for safe storage, including any incompatibilities:	Keep container tightly closed. Store in a well-ventilated place. Store in cool, dry place.

8. Exposure controls/personal protection

Control parameters

Occupational exposure limits

None of the components have assigned exposure limits.

Appropriate engineering controls

No data available.

Individual protection measures, such as personal protective equipment

General information:	Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level.
Eye/face protection:	Wear safety glasses with side shields (or goggles).
Skin protection	
Hand protection:	Chemical resistant gloves
Other:	Wear suitable protective clothing.

Respiratory protection:	In case of inadequate ventilation, use respiratory protection.
Hygiene measures:	Provide eyewash station and safety shower. Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing to remove contaminants. Discard contaminated footwear that cannot be cleaned.

9. Physical and chemical properties

Appearance

Physical state:	Solid
Form:	Crystals or powder.
Color:	White
Odor:	Odorless
Odor threshold:	No data available.
pH:	4.4 - 4.7
Melting point/freezing point:	253 °C
Initial boiling point and boiling range:	No data available.
Flash Point:	No data available.
Evaporation rate:	No data available.
Flammability (solid, gas):	No data available.
Upper/lower limit on flammability or explosive limits	
Flammability limit - upper (%):	No data available.
Flammability limit - lower (%):	No data available.
Explosive limit - upper (%):	No data available.
Explosive limit - lower (%):	No data available.
Vapor pressure:	No data available.
Vapor density:	No data available.
Relative density:	2.34 (20 °C)
Solubility(ies)	
Solubility in water:	330 g/l (25 °C)
Solubility (other):	No data available.
Partition coefficient (n-octanol/water):	No data available.
Auto-ignition temperature:	No data available.
Decomposition temperature:	No data available.
Viscosity:	No data available.
Other information	
Molecular weight:	136.09 g/mol (H3O4P.K)

10. Stability and reactivity

Reactivity:	No dangerous reaction known under conditions of normal use.
Chemical stability:	Material is stable under normal conditions.
Possibility of hazardous reactions:	Hazardous polymerization does not occur.
Conditions to avoid:	Contact with incompatible materials.
Incompatible materials:	Acids.

Hazardous decomposition products: Oxides of potassium. oxides of phosphorus

11. Toxicological information

Information on likely routes of exposure

Ingestion: Irritating. May cause nausea, stomach pain and vomiting.

Inhalation: May cause irritation to the respiratory system.

Skin contact: Causes mild skin irritation.

Eye contact: Causes eye irritation.

Information on toxicological effects

Acute toxicity (list all possible routes of exposure)

Oral Product: LD 50 (Mouse): Approximate 1,700 mg/kg

Dermal Product: No data available.

Inhalation Product: No data available.

Repeated dose toxicity Product: No data available.

Skin corrosion/irritation Product: Causes mild skin irritation.

Serious eye damage/eye irritation Product: Causes eye irritation.

Respiratory or skin sensitization Product: Not a skin sensitizer.

Carcinogenicity Product: This substance has no evidence of carcinogenic properties.

IARC Monographs on the Evaluation of Carcinogenic Risks to Humans:
No carcinogenic components identified

US. National Toxicology Program (NTP) Report on Carcinogens:
No carcinogenic components identified

US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050):
No carcinogenic components identified

Germ cell mutagenicity

In vitro Product: No mutagenic components identified

In vivo Product: No mutagenic components identified

Reproductive toxicity Product: No components toxic to reproduction

Specific target organ toxicity - single exposure

Product: None known.

Specific target organ toxicity - repeated exposure

Product: None known.

Aspiration hazard

Product: Not classified

Other effects: None known.

12. Ecological information

Ecotoxicity:

Acute hazards to the aquatic environment:

Fish

Product: No data available.

Aquatic invertebrates

Product: No data available.

Specified substance(s):

POTASSIUM LC 50 (Zebra mussel (*Dreissena polymorpha*), 24 h): 80 - 105 mg/l Mortality
 PHOSPHATE LC 50 (Polychaete (*Neanthes grubei*), 28 d): 0.92 mg/l Mortality
 MONOBASIC LC 50 (Polychaete worm (*Nereis arenaceodentata*), 28 d): 1.9 mg/l Mortality

Chronic hazards to the aquatic environment:

Fish

Product: No data available.

Aquatic invertebrates

Product: No data available.

Toxicity to Aquatic Plants

Product: No data available.

Persistence and degradability

Biodegradation

Product: There are no data on the degradability of this product.

BOD/COD ratio

Product: No data available.

Bioaccumulative potential

Bioconcentration factor (BCF)

Product: No data available on bioaccumulation.

Partition coefficient n-octanol / water (log Kow)

Product: No data available.

Mobility in soil: No data available.

Other adverse effects: The product components are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

13. Disposal considerations

Disposal instructions: Discharge, treatment, or disposal may be subject to national, state, or local laws.

Contaminated packaging: Since emptied containers retain product residue, follow label warnings even after container is emptied.

14. Transport information

DOT
Not regulated.

IMDG
Not regulated.

IATA
Not regulated.

15. Regulatory information

US federal regulations

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)
US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)
None present or none present in regulated quantities.

CERCLA Hazardous Substance List (40 CFR 302.4):
None present or none present in regulated quantities.

Superfund amendments and reauthorization act of 1986 (SARA)

Hazard categories

Acute (Immediate) Chronic (Delayed) Fire Reactive Pressure Generating

SARA 302 Extremely hazardous substance
None present or none present in regulated quantities.

SARA 304 Emergency release notification
None present or none present in regulated quantities.

SARA 311/312 Hazardous chemical
Chemical identity Threshold Planning Quantity

SARA 313 (TRI reporting)
None present or none present in regulated quantities.

Clean Water Act Section 311 Hazardous Substances (40 CFR 117.3)
None present or none present in regulated quantities.

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130):
None present or none present in regulated quantities.

US state regulations

US. California Proposition 65
No ingredient regulated by CA Prop 65 present.

US. New Jersey Worker and Community Right-to-Know Act
No ingredient regulated by NJ Right-to-Know Law present.

US. Massachusetts RTK - Substance List

No ingredient regulated by MA Right-to-Know Law present.

US. Pennsylvania RTK - Hazardous Substances

No ingredient regulated by PA Right-to-Know Law present.

US. Rhode Island RTK

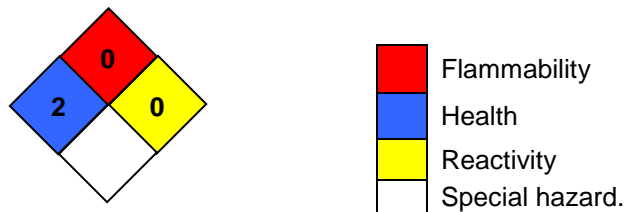
No ingredient regulated by RI Right-to-Know Law present.

Inventory Status:

Australia AICS:	On or in compliance with the inventory
Canada DSL Inventory List:	On or in compliance with the inventory
EINECS, ELINCS or NLP:	On or in compliance with the inventory
Japan (ENCS) List:	On or in compliance with the inventory
China Inv. Existing Chemical Substances:	Not in compliance with the inventory.
Korea Existing Chemicals Inv. (KECI):	On or in compliance with the inventory
Canada NDSL Inventory:	Not in compliance with the inventory.
Philippines PICCS:	On or in compliance with the inventory
US TSCA Inventory:	On or in compliance with the inventory
New Zealand Inventory of Chemicals:	On or in compliance with the inventory
Japan ISHL Listing:	On or in compliance with the inventory
Japan Pharmacopoeia Listing:	Not in compliance with the inventory.

16. Other information, including date of preparation or last revision

NFPA Hazard ID



Hazard rating: 0 - Minimal; 1 - Slight; 2 - Moderate; 3 - Serious; 4 - Severe

Issue date:	05-12-2014
Revision date:	No data available.
Version #:	1.0
Further information:	No data available.

Disclaimer:

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