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Revision Number 3

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

1.1. Product identifier

Product Code 8001-54-5

Product Name Benzalkonium chloride

Other means of identification

NOTE [1] - This substance is exempted from registration because it belongs to a category that is exempted from the requirements of REACH per Article 2(1), (2) and (3)

EC No (EU Index No) 264-151-6

CAS Number 8001-54-5

Synonyms Alkyl-benzyl-dimethylammonium chloride

Pure substance/mixture Mixture

Contains Benzalkonium chloride

Formula C₂₂H₄₀CIN (based on average value of C₈-C₁₈ mixed alkyl groups)

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

Recommended Use Laboratory chemicals Disinfectant Preservative Excipient Used as an Excipient Biopharma ingredient

Uses advised against Do not use where contact with food or drinking water is possible

1.3. Details of the supplier of the safety data sheet

Manufacturer

Aceto Pharma (India) Private Limited 184-186/P, Vill: Chacharwadi Vasna, Sarkhej-Bavla Highway, Tal-Sanand, Dist-Ahmedabad-382110, Gujarat, India. Web: www.actylislab.comE-Mail Address: safety.amd@actylis.com; qa.amd@actylis.com

1.4. Emergency telephone number

Emergency telephone India: 02717 616 717

Emergency telephone - §45 - (EC)1272/2008

Europe 112

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification according to Regulation (EC) No. 1272/2008 [CLP]

Acute toxicity - Oral Category 4 - (H302)

Skin corrosion/irritation	Category 2 - (H315)
Serious eye damage/eye irritation	Category 1 - (H318)
Acute aquatic toxicity	Category 1 - (H400)
Chronic aquatic toxicity	Category 1 - (H410)

2.2. Label elements

Contains Benzalkonium chloride



Signal word

Danger

Hazard statements

H302 - Harmful if swallowed.

H315 - Causes skin irritation.

H318 - Causes serious eye damage.

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

Precautionary Statements - EU (§28, 1272/2008)

P264 - Wash face, hands and any exposed skin thoroughly after handling.

P273 - Avoid release to the environment.

P280 - Wear protective gloves and eye/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.

P391 - Collect spillage.

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.

50 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (gas).

50 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (vapor).

50 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (dust/mist).

Unknown aquatic toxicity

Contains 0 % of components with unknown hazards to the aquatic environment.

2.3. Other hazards

No information available.

Endocrine Disruptor Information

This product does not contain any known or suspected endocrine disruptors.

Chemical name	EU - REACH (1907/2006) - Article 59(1) - Candidate List of Substances of Very High Concern (SVHC) for Authorisation	EU - REACH (1907/2006) - Endocrine Disruptor Assessment List of Substances
Benzalkonium chloride	-	-
Water	-	-

Chemical name	Endocrine disrupting properties in accordance with the criteria set out in Commission Delegated Regulation (EU) 2017/2100(3) or Commission Regulation (EU) 2018/605(4)
Benzalkonium chloride	-
Water	-

SECTION 3: Composition/information on ingredients**3.1 Substances**

Chemical name	Weight-%	REACH registration number	EC No (EU Index No)	Classification according to Regulation (EC) No. 1272/2008 [CLP]	Specific concentration limit (SCL)	M-Factor	M-Factor (long-term)
Benzalkonium chloride 8001-54-5	50%	No data available	8001-54-5	Acute toxicity, Category 4, Oral, H302 Acute toxicity, Category 4, Dermal, H312 Skin corrosion, Category 1B, H314 Acute aquatic toxicity, Category 1, H400	-	-	-
Water 7732-18-5	50%	No data available	231-791-2	No data available	-	-	-

Full text of H- and EUH-phrases: see section 16

Acute Toxicity Estimate

No information available

Chemical name	Oral LD50 mg/kg	Dermal LD50 mg/kg	Inhalation LC50 - 4 hour - dust/mist - mg/L	Inhalation LC50 - 4 hour - vapor - mg/L	Inhalation LC50 - 4 hour - gas - ppm
Benzalkonium chloride 8001-54-5	240	1420	No data available	No data available	No data available
Water 7732-18-5	89838.9	No data available	No data available	No data available	No data available

This product does not contain candidate substances of very high concern at a concentration $\geq 0.1\%$ (Regulation (EC) No. 1907/2006 (REACH), Article 59)

SECTION 4: First aid measures**4.1. Description of first aid measures**

Inhalation	Remove to fresh air.
Eye contact	Rinse thoroughly with plenty of water for at least 15 minutes, lifting lower and upper eyelids. Consult a physician.
Skin contact	Wash skin with soap and water. In the case of skin irritation or allergic reactions see a physician.
Ingestion	Rinse mouth.

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

Symptoms	May cause allergic skin reaction. Inhalation of high vapor concentrations may cause symptoms like headache, dizziness, tiredness, nausea and vomiting. May cause blindness.
Effects of Exposure	See Section 11 for additional Toxicological Information.

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

Note to physicians Treat symptomatically.

SECTION 5: Firefighting measures**5.1. Extinguishing media**

Suitable Extinguishing Media Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Unsuitable extinguishing media Do not scatter spilled material with high pressure water streams.

5.2. Special hazards arising from the substance or mixture

Specific hazards arising from the chemical Vapors from liquefied gas are initially heavier than air and spread along ground.

5.3. Advice for firefighters

Special protective equipment and precautions for fire-fighters Firefighters should wear self-contained breathing apparatus and full firefighting turnout gear. Use personal protection equipment.

SECTION 6: Accidental release measures**6.1. Personal precautions, protective equipment and emergency procedures**

Personal precautions Ensure adequate ventilation.

For emergency responders Use personal protection recommended in Section 8.

6.2. Environmental precautions

Environmental precautions Do not allow to enter into soil/subsoil.

6.3. Methods and material for containment and cleaning up

Methods for containment Absorb with earth, sand or other non-combustible material and transfer to containers for later disposal.

Methods for cleaning up Take up mechanically, placing in appropriate containers for disposal.

Prevention of secondary hazards Clean contaminated objects and areas thoroughly observing environmental regulations.

6.4. Reference to other sections

Reference to other sections See section 8 for more information. See section 13 for more information.

SECTION 7: Handling and storage**7.1. Precautions for safe handling**

Advice on safe handling Ensure adequate ventilation.

General hygiene considerations Handle in accordance with good industrial hygiene and safety practice.

7.2. Conditions for safe storage, including any incompatibilities

Storage Conditions Keep container tightly closed in a dry and well-ventilated place.

7.3. Specific end use(s)

Risk Management Measures The information required is contained in this Safety Data Sheet.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Exposure Limits This product, as supplied, does not contain any hazardous materials with occupational exposure limits established by the region specific regulatory bodies.

Chemical name	European Union	Austria	Belgium	Bulgaria	Croatia
Benzalkonium chloride 8001-54-5	-	-	-	-	-
Water 7732-18-5	-	-	-	-	-
Chemical name	Cyprus	Czech Republic	Denmark	Estonia	Finland
Benzalkonium chloride 8001-54-5	-	-	-	-	-
Water 7732-18-5	-	-	-	-	-
Chemical name	France	Germany TRGS	Germany DFG	Greece	Hungary
Benzalkonium chloride 8001-54-5	-	-	-	-	-
Water 7732-18-5	-	-	-	-	-
Chemical name	Ireland	Italy MDLPS	Italy AIDII	Latvia	Lithuania
Benzalkonium chloride 8001-54-5	-	-	-	-	-
Water 7732-18-5	-	-	-	-	-
Chemical name	Luxembourg	Malta	Netherlands	Norway	Poland
Benzalkonium chloride 8001-54-5	-	-	-	-	-
Water 7732-18-5	-	-	-	-	-
Chemical name	Portugal	Romania	Slovakia	Slovenia	Spain
Benzalkonium chloride 8001-54-5	-	-	-	-	-
Water 7732-18-5	-	-	-	-	-
Chemical name	Sweden		Switzerland		United Kingdom
Benzalkonium chloride 8001-54-5	-		-		-
Water 7732-18-5	-		-		-

Biological occupational exposure This product, as supplied, does not contain any hazardous materials with biological limits

limits established by the region specific regulatory bodies.

Chemical name	European Union	Austria	Bulgaria	Croatia	Czech Republic
Benzalkonium chloride 8001-54-5	-	-	-	-	-
Water 7732-18-5	-	-	-	-	-
Chemical name	Denmark	Finland	France	Germany DFG	Germany TRGS
Benzalkonium chloride 8001-54-5	-	-	-	-	-
Water 7732-18-5	-	-	-	-	-
Chemical name	Hungary	Ireland	Italy MDLPS	Italy AIDII	
Benzalkonium chloride 8001-54-5	-	-	-	-	
Water 7732-18-5	-	-	-	-	
Chemical name	Latvia	Luxembourg	Romania	Slovakia	
Benzalkonium chloride 8001-54-5	-	-	-	-	
Water 7732-18-5	-	-	-	-	
Chemical name	Slovenia	Spain	Switzerland	United Kingdom	
Benzalkonium chloride 8001-54-5	-	-	-	-	
Water 7732-18-5	-	-	-	-	

Derived No Effect Level (DNEL) - Workers No information available

Chemical name	Oral	Dermal	Inhalation
Benzalkonium chloride 8001-54-5	-	-	-
Water 7732-18-5	-	-	-

Derived No Effect Level (DNEL) - General Public No information available.

Chemical name	Oral	Dermal	Inhalation
Benzalkonium chloride 8001-54-5	-	-	-
Water 7732-18-5	-	-	-

Chemical name	Oral	Dermal	Inhalation
Benzalkonium chloride - 8001-54-5	-	-	-
Water - 7732-18-5	-	-	-

Predicted No Effect Concentration (PNEC) No information available.

Chemical name	Freshwater	Freshwater (intermittent release)	Marine water	Marine water (intermittent release)	Air
Benzalkonium chloride 8001-54-5	-	-	-	-	-
Water 7732-18-5	-	-	-	-	-

Chemical name	Freshwater sediment	Marine sediment	Sewage treatment	Soil	Food chain
Benzalkonium chloride 8001-54-5	-	-	-	-	-
Water 7732-18-5	-	-	-	-	-

8.2. Exposure controls

Engineering controls	Apply technical measures to comply with the occupational exposure limits.
Personal Protective Equipment	
Eye/face protection	Tight sealing safety goggles.
Skin and body protection	No special protective equipment required.
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	Handle in accordance with good industrial hygiene and safety practice.
Environmental exposure controls	No information available.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	Liquid
Color	Colorless Slightly Yellow
Odor	No information available.
Odor Threshold	No information available

<u>Property</u>	<u>Values</u>	<u>Remarks • Method</u>
Melting point / Freezing point	No data available	None known
Boiling point / boiling range	> 100 °C	None known
Flammability (solid, gas)	No data available	None known
Flammability Limit in Air		None known
Upper flammability limit	No data available	
Lower flammability limit	No data available	
Flash Point	No data available	None known
Autoignition temperature °C	370 °C	None known
Decomposition temperature		None known
pH	No data available	None known
pH (as aqueous solution)	4.5 - 6.5	None known

Kinematic Viscosity	No data available	None known
Dynamic Viscosity	No Data Available	None known
Water solubility	Soluble in water	None known
Solubility in other solvents	No information available	None known
Partition coefficient: n-octanol/water	No data available	None known
Vapor Pressure	No data available	None known
Relative density	No data available	None known
Bulk density	No data available	
Liquid Density	0.98 g/mol	
Vapor Density	No data available	None known
Particle characteristics		
Particle Size	No information available	
Particle Size Distribution	No information available	

9.2. Other information

Molecular Formula C22H40ClN

9.2.1. Information with regard to physical hazard classes
Not applicable

9.2.2. Other safety characteristics
No information available

SECTION 10: Stability and reactivity**10.1. Reactivity**

Reactivity No information available.

10.2. Chemical stability

Stability Stable under normal conditions.

Explosion Data

Sensitivity to mechanical impact None.

Sensitivity to static discharge None.

10.3. Possibility of hazardous reactions

Possibility of hazardous reactions None under normal processing.

10.4. Conditions to avoid

Conditions to avoid None known based on information supplied.

10.5. Incompatible materials

Incompatible materials None known based on information supplied.

10.6. Hazardous decomposition products

Hazardous Decomposition Products None known based on information supplied.

SECTION 11: Toxicological information**11.1. Information on hazard classes as defined in Regulation (EC) No 1272/2008****Information on likely routes of exposure**

Product Information

Inhalation	Specific test data for the substance or mixture is not available.
Eye contact	Specific test data for the substance or mixture is not available.
Skin contact	Specific test data for the substance or mixture is not available.
Ingestion	Specific test data for the substance or mixture is not available.

Symptoms related to the physical, chemical and toxicological characteristics

Symptoms No information available.

Acute toxicity**Numerical measures of toxicity**

No information available

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

ATEmix (oral)	480.00 mg/kg
ATEmix (dermal)	2,840.00 mg/kg
ATEmix (inhalation-gas)	99,999.00 ppm
ATEmix (inhalation-vapor)	99,999.00 mg/l
ATEmix (inhalation-dust/mist)	99,999.00 mg/l

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.

50 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (gas).

50 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (vapor).

50 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (dust/mist).

Chemical name	Oral LD50	Dermal LD50	Inhalation LC50
Benzalkonium chloride	= 240 mg/kg (Rat)	= 1420 mg/kg (Rat)	-
Water	-	-	-

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Skin corrosion/irritation No information available.

Serious eye damage/eye irritation No information available.

Respiratory or skin sensitization No information available.

Germ cell mutagenicity No information available.

Chemical name	European Union
Benzalkonium chloride	-
Water	-

Carcinogenicity No information available.

Chemical name	European Union
Benzalkonium chloride	-

Water	-
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Reproductive toxicity No information available.

Chemical name	European Union
Benzalkonium chloride	-
Water	-

STOT - single exposure No information available.

STOT - repeated exposure No information available.

Aspiration hazard No information available.

11.2. Information on other hazards

11.2.1. Endocrine disrupting properties

Endocrine disrupting properties No information available.

11.2.2. Other information

Other Adverse Effects No information available.

SECTION 12: Ecological information

12.1. Toxicity

Ecotoxicity The environmental impact of this product has not been fully investigated.

Unknown aquatic toxicity Contains 0 % of components with unknown hazards to the aquatic environment.

Chemical name	Algae/aquatic plants	Fish	Toxicity to microorganisms	Crustacea
Benzalkonium chloride	-	LC50: 0.223 - 0.46mg/L (96h, <i>Lepomis macrochirus</i>) LC50: 0.823 - 1.61mg/L (96h, <i>Oncorhynchus mykiss</i>) LC50: =2.4mg/L (96h, <i>Oryzias latipes</i>) LC50: =1.3mg/L (96h, <i>Poecilia reticulata</i>)	-	-
Water	-	-	-	-

12.2. Persistence and degradability

Persistence/Degradability No information available.

12.3. Bioaccumulative potential

Bioaccumulation There is no data for this product.

Chemical name	Partition coefficient
Benzalkonium chloride	-

Water	-
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12.4. Mobility in soil

Mobility in Soil No information available.

12.5. Results of PBT and vPvB assessment

PBT and vPvB assessment UN.

Chemical name	PBT and vPvB assessment
Benzalkonium chloride	Not determined
Water	Not determined

12.6. Endocrine disrupting properties

Endocrine disrupting properties No information available.

12.7. Other adverse effects

No information available.

SECTION 13: Disposal considerations**13.1. 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.

SECTION 14: Transport information**IATA****Notes**

No components found suitable for Technical Name.

14.1. UN number or ID number	UN1760
14.2. UN proper shipping name	Corrosive liquid, n.o.s.
14.3. Transport hazard class(es)	8
14.4. Packing group	II
Description	UN1760, Corrosive liquid, n.o.s., 8, II
14.5. Environmental hazard	Not applicable
14.6. Special precautions for user	
Special Provisions	A3, A803
ERG Code	8L

IMDG

14.1. UN number or ID number	UN1760
14.2. UN proper shipping name	Corrosive liquid, n.o.s.
14.3. Transport hazard class(es)	8
14.4. Packing Group	II
Description	UN1760, Corrosive liquid, n.o.s., 8, II
14.5. Environmental hazard	Not applicable
14.6. Special precautions for user	
Special Provisions	274
EmS No.	F-A, S-B
14.7. Maritime transport in bulk according to IMO instruments	No information available

RID**Notes****No components found suitable for Technical Name.**

14.1. UN-No	UN1760
14.2. UN proper shipping name	CORROSIVE LIQUID, N.O.S.
14.3. Transport hazard class(es)	8
14.4. Packing Group	II
Description	UN1760, CORROSIVE LIQUID, N.O.S., 8, II
14.5. Environmental hazard	Not applicable
14.6. Special precautions for user	
Special Provisions	274
Classification Code	C9

ADR**Notes****No components found suitable for Technical Name.**

14.1. UN number or ID number	UN1760
14.2. UN proper shipping name	Corrosive liquid, n.o.s.
14.3. Transport hazard class(es)	8
14.4. Packing Group	II
Description	UN1760, Corrosive liquid, n.o.s., 8, II, (E)
14.5. Environmental hazard	Not applicable
14.6. Special precautions for user	
Special Provisions	274
Classification Code	C9
Tunnel Restriction Code	(E)

SECTION 15: Regulatory information**15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture**

Chemical name	French RG number
Benzalkonium chloride - 8001-54-5	RG 65, RG 66 RG 5, RG 14, RG 15, RG 15bis, RG 20bis RG 15bis, RG 74 RG 2, RG 9, RG 14, RG 20, RG 34, RG 65
Water - 7732-18-5	-

Chemical name	Netherlands - List of Carcinogens	Netherlands - List of Mutagens	Netherlands - List of Reproductive Toxins
Benzalkonium chloride	-	-	-
Water	-	-	-

European Union

Take note of Directive 98/24/EC on the protection of the health and safety of workers from the risks related to chemical agents at work.

Authorizations and/or restrictions on use:

This product does not contain substances subject to authorization (Regulation (EC) No. 1907/2006 (REACH), Annex XIV) This product does not contain substances subject to restriction (Regulation (EC) No. 1907/2006 (REACH), Annex XVII)

Chemical name	Restricted substance per REACH Annex XVII	Substance subject to authorization per REACH Annex XIV

Benzalkonium chloride - 8001-54-5	-	-
Water - 7732-18-5	-	-

Persistent Organic Pollutants

Not applicable

Chemical name	Persistent Organic Pollutants per (EC) 2019/1021 - Annex Number
Benzalkonium chloride - 8001-54-5	-
Water - 7732-18-5	-

Chemical name	European Export/Import Restrictions per (EC) 649/2012 - Annex Number
Benzalkonium chloride - 8001-54-5	-
Water - 7732-18-5	-

Chemical name	Lower-tier requirements (tons)	Upper-tier requirements (tons)
Benzalkonium chloride - 8001-54-5	-	-
Water - 7732-18-5	-	-

Ozone-depleting substances (ODS) regulation (EC) 1005/2009

Not applicable

Chemical name	Ozone depletion potential (ODP)	Ozone-depleting substances (ODS) regulation (EC) 1005/2009
Benzalkonium chloride - 8001-54-5	-	-
Water - 7732-18-5	-	-

Chemical name	EU - Plant Protection Products (1107/2009/EC)
Benzalkonium chloride - 8001-54-5	-
Water - 7732-18-5	-

Chemical name	Biocidal Products Regulation (EU) No 528/2012 (BPR)
Benzalkonium chloride - 8001-54-5	-
Water - 7732-18-5	-

Chemical name	EU - Water Framework Directive (2000/60/EC)
Benzalkonium chloride - 8001-54-5	-
Water - 7732-18-5	-

Chemical name	EU - Environmental Quality Standards (2008/105/EC)
Benzalkonium chloride - 8001-54-5	-
Water - 7732-18-5	-

International Inventories

TSCA	Does not comply
DSL/NDL	Complies
EINECS/ELINCS	Does not comply
Japan (ENCS)	Complies
Inventory of Existing Chemical Substances in China	Complies
Korea (KECL)	Complies
Philippines (PICCS)	Complies
AIIIC	Complies
NZIoC	Complies

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

DSL/NDL - 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 Chemicals Inventory
PICCS - Philippines Inventory of Chemicals and Chemical Substances
AIIC - Australian Inventory of Industrial Chemicals
NZIoC - New Zealand Inventory of Chemicals

15.2. Chemical safety assessment

Chemical Safety Report No information available

SECTION 16: Other information

Key or legend to abbreviations and acronyms

Legend

SVHC: Substances of Very High Concern for Authorization:
PBT: Persistent, Bioaccumulative, and Toxic (PBT) Substances
vPvB: Very Persistent and very Bioaccumulative (vPvB) Substances

Legend Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

TWA TWA (time-weighted average) STEL STEL (Short Term Exposure Limit)
Ceiling Maximum limit value * Skin designation
+ Sensitizers

Classification procedure	
Classification according to Regulation (EC) No. 1272/2008 [CLP]	Method Used
Acute oral toxicity	Calculation method
Acute dermal toxicity	Calculation method
Acute inhalation toxicity - gas	Calculation method
Acute inhalation toxicity - vapor	Calculation method
Acute inhalation toxicity - dust/mist	Calculation method
Skin corrosion/irritation	Calculation method
Serious eye damage/eye irritation	Calculation method
Respiratory sensitization	Calculation method
Skin sensitization	Calculation method
Mutagenicity	Calculation method
Carcinogenicity	Calculation method
Reproductive toxicity	Calculation method
STOT - single exposure	Calculation method
STOT - repeated exposure	Calculation method
Acute aquatic toxicity	Calculation method
Chronic aquatic toxicity	Calculation method
Aspiration hazard	Calculation method
Ozone	Calculation method

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)
European Chemicals Agency (ECHA) Committee for Risk Assessment (ECHA_RAC)
European Chemicals Agency (ECHA) (ECHA_API)
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 High Production Volume Chemicals
Food Research Journal
Hazardous Substance Database
International Uniform Chemical Information Database (IUCLID)
National Institute of Technology and Evaluation (NITE)
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)
U.S. National Toxicology Program (NTP)
New Zealand's Chemical Classification and Information Database (CCID)
Organization for Economic 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
World Health Organization

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This safety data sheet complies with the requirements of 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