ALUMINIUM STEARATE Bisley International LLC

Chemwatch: 22610-1 Version No: 5.1.1.1

Chemwatch Hazard Alert Code: 1

Issue Date: 27/06/2017 Print Date: 06/04/2021 S.GHS.USA.EN

SECTION 1 Identification

Product name	ALUMINIUM STEARATE
Chemical Name	aluminium stearate
Synonyms	C18-H37-AI-O4; aluminium dihydroxy(octadecanato-O-); aluminium dihydroxy(stearato)-; aluminum dihydroxy stearate; dihydroxyaluminium stearate; aluminium monostearate; dibasic aluminium stearate; aluminium stearate H.G.
Chemical formula	C18H37AIO4
Other means of identification	Not Available
CAS number	7047-84-9

Recommended use of the chemical and restrictions on use

Safety Data Sheet according to OSHA HazCom Standard (2012) requirements

Relevant identified uses Paint and varnish drier, greases, waterproofing agent, cement additive, lubricants, cutting compounds, flatting agent, cosmetics and pharmaceuticals, defoaming agent in beet sugar and yeast processing.

Name, address, and telephone number of the chemical manufacturer, importer, or other responsible party

Registered company name	Bisley International LLC
Address	1790 Hughes Landing Boulevard Suite 400 The Woodlands TX 77380 United States
Telephone	+1 (844) 424 7539
Fax	Not Available
Website	www.bisley.biz
Email	compliance@bisley.biz

Emergency phone number

Association / Organisation	Bisley International LLC	CHEMWATCH EMERGENCY RESPONSE
Emergency telephone numbers	+1 855 237 5573	+61 2 9186 1132
Other emergency telephone numbers	+61 2 9186 1132	+1 855-237-5573

Once connected and if the message is not in your prefered language then please dial 01

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SECTION 2 Hazard(s) identification

Classification of the substance or mixture

Considered a Hazardous Substance by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200). Not classified as Dangerous Goods for transport purposes.

NFPA 704 diamond



Note: The hazard category numbers found in GHS classification in section 2 of this SDSs are NOT to be used to fill in the NFPA 704 diamond. Blue = Health Red = Fire Yellow = Reactivity White = Special (Oxidizer or water reactive substances)

Classification Eye Irritation Category 2B

Label elements

Hazard pictogram(s)	Hazard pictogram(s) Not Applicable	
Signal word Warning		
Hazard statement(s)		
H320	Causes eye irritation.	

Hazard(s) not otherwise classified

Not Applicable

Precautionary statement(s) Prevention

P264	Wash all exposed external body areas thoroughly after handling.
Precautionary statement(s) Response	
P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P337+P313	If eye irritation persists: Get medical advice/attention.

Precautionary statement(s) Storage

Not Applicable

Precautionary statement(s) Disposal

Not Applicable

SECTION 3 Composition / information on ingredients

Substances		
CAS No	%[weight]	Name
7047-84-9	100	aluminium stearate

Mixtures

- -

See section above for composition of Substances

SECTION 4 First-aid measures

Description of first aid measures		
Eye Contact	 If this product comes in contact with the eyes: Wash out immediately with fresh running water. Ensure complete irrigation of the eye by keeping eyelids apart and away from eye and moving the eyelids by occasionally lifting the upper and lower lids. Seek medical attention without delay; if pain persists or recurs seek medical attention. Removal of contact lenses after an eye injury should only be undertaken by skilled personnel. 	
Skin Contact	If skin contact occurs: Immediately remove all contaminated clothing, including footwear. Flush skin and hair with running water (and soap if available). Seek medical attention in event of irritation. 	
Inhalation	 If dust is inhaled, remove from contaminated area. Encourage patient to blow nose to ensure clear passage of breathing. If irritation or discomfort persists seek medical attention. 	
Ingestion	 If swallowed do NOT induce vomiting. If vomiting occurs, lean patient forward or place on left side (head-down position, if possible) to maintain open airway and prevent aspiration. Observe the patient carefully. Never give liquid to a person showing signs of being sleepy or with reduced awareness; i.e. becoming unconscious. Give water to rinse out mouth, then provide liquid slowly and as much as casualty can comfortably drink. Seek medical advice. 	

Most important symptoms and effects, both acute and delayed

See Section 11

Indication of any immediate medical attention and special treatment needed

- Manifestation of aluminium toxicity include hypercalcaemia, anaemia, Vitamin D refractory osteodystrophy and a progressive encephalopathy (mixed dysarthria-apraxia of speech, asterixis, tremulousness, myoclonus, dementia, focal seizures). Bone pain, pathological fractures and proximal myopathy can occur. Symptoms usually develop
- insidiously over months to years (in chronic renal failure patients) unless dietary aluminium loads are excessive.
- Serum aluminium levels above 60 ug/ml indicate increased absorption. Potential toxicity occurs above 100 ug/ml and clinical symptoms are present when levels exceed 200 ug/ml.

Deferoxamine has been used to treat dialysis encephalopathy and osteomalacia. CaNa2EDTA is less effective in chelating aluminium. [Ellenhorn and Barceloux: Medical Toxicology]

SECTION 5 Fire-fighting measures

Extinguishing media

- Foam.
- Dry chemical powder.BCF (where regulations permit).

Carbon dioxide.

Special hazards arising from the substrate or mixture

Fire Incompatibility	Avoid contamination with oxidising agents i.e. nitrates, oxidising acids, chlorine bleaches, pool chlorine etc. as ignition may result		
Special protective equipment a	Special protective equipment and precautions for fire-fighters		
Fire Fighting	 Alert Fire Brigade and tell them location and nature of hazard. Wear breathing apparatus plus protective gloves. Prevent, by any means available, spillage from entering drains or water courses. Use water delivered as a fine spray to control fire and cool adjacent area. 		
Fire/Explosion Hazard	 Combustible solid which burns but propagates flame with difficulty; it is estimated that most organic dusts are combustible (circa 70%) - according to the circumstances under which the combustion process occurs, such materials may cause fires and / or dust explosions. Organic powders when finely divided over a range of concentrations regardless of particulate size or shape and suspended in air or some other oxidizing medium may form explosive dust-air mixtures and result in a fire or dust explosion (including secondary explosions). Avoid generating dust, particularly clouds of dust in a confined or unventilated space as dusts may form an explosive mixture with air, and any source of ignition, i.e. flame or spark, will cause fire or explosion. Dust clouds generated by the fine grinding of the solid are a particular hazard; accumulations of fine dust (420 micron or less) may burn rapidly and fiercely if ignited - particles exceeding this limit will generally not form flammable dust clouds; once initiated, however, larger particles up to 1400 microns diameter will contribute to the propagation of an explosion. Combustion products include: carbon monoxide (CO) carbon dioxide (CO2) acrolein metal oxides other pyrolysis products typical of burning organic material. May emit poisonous fumes. 		

SECTION 6 Accidental release measures

Personal precautions, protective equipment and emergency procedures

See section 8

Environmental precautions

See section 12

Methods and material for containment and cleaning up

Minor Spills	 Remove all ignition sources. Clean up all spills immediately. Avoid contact with skin and eyes. Control personal contact with the substance, by using protective equipment.
Major Spills	Moderate hazard. CAUTION: Advise personnel in area. Alert Emergency Services and tell them location and nature of hazard. Control personal contact by wearing protective clothing.

Personal Protective Equipment advice is contained in Section 8 of the SDS.

SECTION 7 Handling and storage

Precautions for safe handling	
Safe handling	 Avoid all personal contact, including inhalation. Wear protective clothing when risk of exposure occurs. Use in a well-ventilated area. Prevent concentration in hollows and sumps. Organic powders when finely divided over a range of concentrations regardless of particulate size or shape and suspended in air or some other oxidizing medium may form explosive dust-air mixtures and result in a fire or dust explosion (including secondary) explosions) Minimise airborne dust and eliminate all ignition sources. Keep away from heat, hot surfaces, sparks, and flame. Establish good housekeeping practices. Remove dust accumulations on a regular basis by vacuuming or gentle sweeping to avoid creating dust clouds.
Other information	 Store in original containers. Keep containers securely sealed. Store in a cool, dry area protected from environmental extremes. Store away from incompatible materials and foodstuff containers.

Conditions for safe storage, including any incompatibilities

Suitable container	 Glass container is suitable for laboratory quantities Polyethylene or polypropylene container. Check all containers are clearly labelled and free from leaks. 	
Storage incompatibility	 Avoid reaction with oxidising agents 	

0

0 — May be stored together with specific preventions **+** — May be stored together

SECTION 8 Exposure controls / personal protection

Control parameters

Occupational Exposure Limits (OEL)

INGREDIENT DATA

Source	Ingredient	Material name	TWA	STEL	Peak	Notes
US ACGIH Threshold Limit Values (TLV)	aluminium stearate	Aluminum metal and insoluble compounds (Respirable particulate matter)	1 mg/m3	Not Available	Not Available	A4
US ACGIH Threshold Limit Values (TLV)	aluminium stearate	Stearates (Respirable particulate matter)	3 mg/m3	Not Available	Not Available	A4
US ACGIH Threshold Limit Values (TLV)	aluminium stearate	Stearates (Inhalable particulate matter)	10 mg/m3	Not Available	Not Available	A4

Emergency Limits

Ingredient	TEEL-1	TEEL-2		TEEL-3	
ALUMINIUM STEARATE	Not Available	Not Available		Not Available	
Ingredient	Original IDLH		Revised IDLH		
aluminium stearate	Not Available		Not Available		

Exposure controls

Appropriate engineering controls	Engineering controls are used to remove a hazard or place a barrier between the worker and the hazard. Well-designed engineering controls can be highly effective in protecting workers and will typically be independent of worker interactions to provide this high level of protection. The basic types of engineering controls are: Process controls which involve changing the way a job activity or process is done to reduce the risk. Enclosure and/or isolation of emission source which keeps a selected hazard "physically" away from the worker and ventilation that strategically "adds" and "removes" air in the work environment.
Personal protection	
Eye and face protection	 Safety glasses with side shields. Chemical goggles. Contact lenses may pose a special hazard; soft contact lenses may absorb and concentrate irritants. A written policy document, describing the wearing of lenses or restrictions on use, should be created for each workplace or task.
Skin protection	See Hand protection below
Hands/feet protection	The selection of suitable gloves does not only depend on the material, but also on further marks of quality which vary from manufacturer to manufacturer. Where the chemical is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application. The exact break through time for substances has to be obtained from the manufacturer of the protective gloves and has to be observed when making a final choice. Personal hygiene is a key element of effective hand care. Experience indicates that the following polymers are suitable as glove materials for protection against undissolved, dry solids, where abrasive particles are not present.
Body protection	See Other protection below
Other protection	 Overalls. P.V.C apron. Barrier cream. Skin cleansing cream.

Respiratory protection

Particulate. (AS/NZS 1716 & 1715, EN 143:2000 & 149:001, ANSI Z88 or national equivalent)

- Respirators may be necessary when engineering and administrative controls do not adequately prevent exposures.
- The decision to use respiratory protection should be based on professional judgment that takes into account toxicity information, exposure measurement data, and frequency and likelihood of the worker's exposure ensure users are not subject to high thermal loads which may result in heat stress or distress due to personal protective equipment (powered, positive flow, full face apparatus may be an option).
- Published occupational exposure limits, where they exist, will assist in determining the adequacy of the selected respiratory protection. These may be government mandated or vendor recommended.
- Certified respirators will be useful for protecting workers from inhalation of particulates when properly selected and fit tested as part of a complete respiratory protection program.
- Use approved positive flow mask if significant quantities of dust becomes airborne.
- Try to avoid creating dust conditions.

SECTION 9 Physical and chemical properties

Information on basic physical and chemical properties

Appearance

Physical state	Divided Solid	Relative density (Agua= 1)	Not Available
Odour	Not Available	Partition coefficient n-octanol / water	Not Available
Odour threshold	Not Available	Auto-ignition temperature (°C)	Not available.
pH (as supplied)	Not Applicable	Decomposition temperature	Not available.
Melting point / freezing point (°C)	Not Available	Viscosity (cSt)	Not Applicable
Initial boiling point and boiling range (°C)	Not Available	Molecular weight (g/mol)	344.53
Flash point (°C)	Not Available	Taste	Not Available
Evaporation rate	Not Applicable	Explosive properties	Not Available
Flammability	Not Available	Oxidising properties	Not Available
Upper Explosive Limit (%)	Not available.	Surface Tension (dyn/cm or mN/m)	Not Applicable
Lower Explosive Limit (%)	Not available.	Volatile Component (%vol)	Not Applicable
Vapour pressure (kPa)	Not Applicable	Gas group	Not Available
Solubility in water	Immiscible	pH as a solution (1%)	Not Applicable
Vapour density (Air = 1)	Not Applicable	VOC g/L	Not Available

SECTION 10 Stability and reactivity

Reactivity	See section 7
Chemical stability	 Unstable in the presence of incompatible materials. Product is considered stable. Hazardous polymerisation will not occur.
Possibility of hazardous reactions	See section 7
Conditions to avoid	See section 7
Incompatible materials	See section 7
Hazardous decomposition products	See section 5

SECTION 11 Toxicological information

Information on toxicological effects

Inhaled	The material is not thought to produce either adverse health effects or irritation of the respiratory tract following inhalation (as classified by EC Directives using animal models). Nevertheless, adverse systemic effects have been produced following exposure of animals by at least one other route and good hygiene practice requires that exposure be kept to a minimum and that suitable control measures be used in an occupational setting. Persons with impaired respiratory function, airway diseases and conditions such as emphysema or chronic bronchitis, may incur further disability if excessive concentrations of particulate are inhaled. If prior damage to the circulatory or nervous systems has occurred or if kidney damage has been sustained, proper screenings should be conducted on individuals who may be exposed to further risk if handling and use of the material result in excessive exposures.		
Ingestion	Accidental ingestion of the material may be damaging to the health of the individual. Acute toxic responses to aluminium are confined to the more soluble forms. Ingestion of anionic surfactants may produce diarrhoea, bloated stomach, and occasional vomiting.		
Skin Contact	Skin contact is not thought to have harmful health effects (as classified under EC Directives); the material may still produce health damage following entry through wounds, lesions or abrasions. Repeated exposure may cause skin cracking, flaking or drying following normal handling and use. There is some evidence to suggest that this material can cause inflammation of the skin on contact in some persons. Anionic surfactants can cause skin redness and pain, as well as a rash. Cracking, scaling and blistering can occur. Open cuts, abraded or irritated skin should not be exposed to this material Entry into the blood-stream, through, for example, cuts, abrasions or lesions, may produce systemic injury with harmful effects. Examine the skin prior to the use of the material and ensure that any external damage is suitably protected		
Eye	There is some evidence to suggest that this material can cause eye irritation and damage in some persons. Direct eye contact with some anionic surfactants in high concentration can cause severe damage to the cornea. Low concentrations can cause discomfort, excess blood flow, and corneal clouding and swelling. Recovery may take several days.		
Chronic	Substance accumulation, in the human body, may occur Exposure to large doses of aluminium has been con Long term exposure to high dust concentrations may 0.5 micron penetrating and remaining in the lung. Prolonged or repeated skin contact may cause degree	and may cause some concern following repeated or long-term occupational exposure. nected with the degenerative brain disease Alzheimer's Disease. cause changes in lung function i.e. pneumoconiosis, caused by particles less than pasing, followed by drying, cracking and skin inflammation.	
	τοχιζιτγ		
aluminium stearate	Not Available	Not Available	
Legend:	 Value obtained from Europe ECHA Registered SL otherwise specified data extracted from RTECS - Re 	bstances - Acute toxicity 2.* Value obtained from manufacturer's SDS. Unless gister of Toxic Effect of chemical Substances	

ALUMINIUM STEARATE	No significant acute toxicological data identified in literature search. Fatty acid salts of low acute toxicity. Their potential to irritate the skin and eves is dependent on chain length.		
	.,		J
Acute Toxicity	×	Carcinogenicity	×
Skin Irritation/Corrosion	×	Reproductivity	×
Serious Eye Damage/Irritation	>	STOT - Single Exposure	×
Respiratory or Skin sensitisation	×	STOT - Repeated Exposure	×
Mutagenicity	×	Aspiration Hazard	×
		Legend: X – Data either no ✓ – Data available	t available or does not fill the criteria for classification to make classification

SECTION 12 Ecological information

Toxicity					
	Endpoint	Test Duration (hr)	Species	Value	Source
aluminium stearate	Not Available	Not Available	Not Available	Not Available	Not Available
Legend:	Extracted from Suite V3.12 (Assessment I	n 1. IUCLID Toxicity Data 2. Europe ECHA Registe QSAR) - Aquatic Toxicity Data (Estimated) 4. US El Data 6. NITE (Japan) - Bioconcentration Data 7. ME	red Substances - Ecotoxicological Information - Aq PA, Ecotox database - Aquatic Toxicity Data 5. ECE TI (Japan) - Bioconcentration Data 8. Vendor Data	uatic Toxicity 3 ETOC Aquatic	3. EPIWIN Hazard

For Surfactants: Kow cannot be easily determined due to hydrophilic/hydrophobic properties of the molecules in surfactants. BCF value: 1-350. Aquatic Fate: Surfactants tend to accumulate at the interface of the air with water and are not extracted into one or the other liquid phases. Terrestrial Fate: Anionic surfactants are not appreciably sorbed by inorganic solids.

For Aluminium and its Compunds and Salts:

Environmental Fate - As an element, aluminium cannot be degraded in the environment, but may undergo various precipitation or ligand exchange reactions. Aluminium in compounds has only one oxidation state (+3), and would not undergo oxidation-reduction reactions under environmental conditions. Aluminium can be complexed by various ligands present in the environment (e.g., fulvic and humic acids). The solubility of aluminium in the environment will depend on the ligands present and the pH. For Fatty Acid Satts:

Environmental Fate: Fatty acid salts are widely used in household cleaning products, cosmetics, lubricants, (and other miscellaneous industrial applications), and coatings. Uses in household cleaning include fabric washing products, fabric conditioners, laundry additives, and surface and toilet cleaners. The hydrocarbon portion of these substances will eventually degrade to carbon dioxide and water; however, the fatty acid components may take longer to break down. Fatty acid salt soaps include the two pesticide active ingredients potassium salts of fatty acids, (including potassium laurate, potassium myristate, potassium oleate, and potassium ricinoleate), and ammonium salts of fatty acids, (ammonium oleate). **DO NOT** discharge into sewer or waterways.

Persistence and degradability

Ingredient	Persistence: Water/Soil	Persistence: Air	
	No Data available for all ingredients	No Data available for all ingredients	
Bioaccumulative potential			
Ingredient	Bioaccumulation		
	No Data available for all ingredients		
Mobility in soil			
Ingredient	Mobility		
	No Data available for all ingredients		

SECTION 13 Disposal considerations

Waste treatment methods	
Product / Packaging disposal	 Legislation addressing waste disposal requirements may differ by country, state and/ or territory. Each user must refer to laws operating in their area. In some areas, certain wastes must be tracked. A Hierarchy of Controls seems to be common - the user should investigate: Reduction Recycling Disposal (if all else fails) This material may be recycled if unused, or if it has not been contaminated so as to make it unsuitable for its intended use. D NOT allow wash water from cleaning or process equipment to enter drains. It may be necessary to collect all wash water for treatment before disposal. In all cases disposal to sewer may be subject to local laws and regulations and these should be considered first. Where in doubt contact the responsible authority. Recycle wherever possible. Consult manufacturer for recycling options or consult local or regional waste management authority for disposal if no suitable treatment or disposal facility can be identified. Dispose of by: burial in a land-fill specifically licensed to accept chemical and / or pharmaceutical wastes or Incineration in a licensed apparatus (after admixture with suitable combustible material) Decontaminate empty containers. Observe all label safeguards until containers are cleaned and destroyed.

Page 7 of 9

Labels Required

Marine Pollutant

Land transport (ADG): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS

Air transport (ICAO-IATA / DGR): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS

Sea transport (IMDG-Code / GGVSee): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS

Transport in bulk according to Annex II of MARPOL and the IBC code

NO

Not Applicable

Transport in bulk in accordance with MARPOL Annex V and the IMSBC Code

Product name	Group
aluminium stearate	Not Available

Transport in bulk in accordance with the ICG Code

Product name	Ship Type
aluminium stearate	Not Available

US Toxic Substances Control Act (TSCA) - Chemical Substance Inventory US TSCA Chemical Substance Inventory - Interim List of Active Substances

SECTION 15 Regulatory information

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

aluminium stearate is found on the following regulatory list	s

US ACGIH Threshold Limit Values (TLV)	
US ACGIH Threshold Limit Values (TLV) - Carcinogens	

US AIHA Workplace Environmental Exposure Levels (WEELs)

Federal Regulations

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Section 311/312 hazard categories

Flammable (Gases, Aerosols, Liquids, or Solids)	No
Gas under pressure	No
Explosive	No
Self-heating	No
Pyrophoric (Liquid or Solid)	No
Pyrophoric Gas	No
Corrosive to metal	No
Oxidizer (Liquid, Solid or Gas)	No
Organic Peroxide	No
Self-reactive	No
In contact with water emits flammable gas	No
Combustible Dust	No
Carcinogenicity	No
Acute toxicity (any route of exposure)	No
Reproductive toxicity	No
Skin Corrosion or Irritation	No
Respiratory or Skin Sensitization	No
Serious eye damage or eye irritation	No
Specific target organ toxicity (single or repeated exposure)	No
Aspiration Hazard	No
Germ cell mutagenicity	No
Simple Asphyxiant	No
Hazards Not Otherwise Classified	No

US. EPA CERCLA Hazardous Substances and Reportable Quantities (40 CFR 302.4) None Reported

State Regulations

US. California Proposition 65 None Reported

National Inventory Status

National Inventory	Status
Australia - AIIC / Australia	
Non-Industrial Use	Yes

National Inventory	Status		
Canada - DSL	Yes		
Canada - NDSL	No (aluminium stearate)		
China - IECSC	Yes		
Europe - EINEC / ELINCS / NLP	Yes		
Japan - ENCS	Yes		
Korea - KECI	Yes		
New Zealand - NZIoC	Yes		
Philippines - PICCS	Yes		
USA - TSCA	Yes		
Taiwan - TCSI	Yes		
Mexico - INSQ	No (aluminium stearate)		
Vietnam - NCI	Yes		
Russia - FBEPH	No (aluminium stearate)		
Legend:	Yes = All CAS declared ingredients are on the inventory No = One or more of the CAS listed ingredients are not on the inventory and are not exempt from listing(see specific ingredients in brackets)		

SECTION 16 Other information

Revision Date	27/06/2017
Initial Date	Not Available

SDS Version Summary

Version	Issue Date	Sections Updated
4.1.1.1	01/10/2007	Acute Health (eye), Acute Health (inhaled), Acute Health (skin), Acute Health (swallowed), Chronic Health, Classification, Disposal, Engineering Control, Environmental, Exposure Standard, Fire Fighter (fire/explosion hazard), Fire Fighter (fire fighting), First Aid (swallowed), Handling Procedure, Personal Protection (other), Personal Protection (eye), Personal Protection (hands/feet), Physical Properties, Spills (major), Spills (minor), Storage (storage requirement), Storage (suitable container), Toxicity and Irritation (Other)
5.1.1.1	27/06/2017	Acute Health (inhaled), Acute Health (skin), Acute Health (swallowed), Chronic Health, Classification, Environmental, Exposure Standard, Fire Fighter (fire/explosion hazard), First Aid (skin), First Aid (swallowed), Personal Protection (Respirator), Spills (minor), Storage (storage requirement), Synonyms

Other information

Classification of the preparation and its individual components has drawn on official and authoritative sources as well as independent review by the Chemwatch Classification committee using available literature references.

The SDS is a Hazard Communication tool and should be used to assist in the Risk Assessment. Many factors determine whether the reported Hazards are Risks in the workplace or other settings. Risks may be determined by reference to Exposures Scenarios. Scale of use, frequency of use and current or available engineering controls must be considered.

Definitions and abbreviations

PC-TWA: Permissible Concentration-Time Weighted Average PC-STEL: Permissible Concentration-Short Term Exposure Limit IARC: International Agency for Research on Cancer ACGIH: American Conference of Governmental Industrial Hygienists STEL: Short Term Exposure Limit TEEL: Temporary Emergency Exposure Limit。 IDLH: Immediately Dangerous to Life or Health Concentrations ES: Exposure Standard OSF: Odour Safety Factor NOAEL :No Observed Adverse Effect Level LOAEL: Lowest Observed Adverse Effect Level TLV: Threshold Limit Value LOD: Limit Of Detection OTV: Odour Threshold Value **BCF: BioConcentration Factors** BEI: Biological Exposure Index AIIC: Australian Inventory of Industrial Chemicals **DSL: Domestic Substances List** NDSL: Non-Domestic Substances List IECSC: Inventory of Existing Chemical Substance in China EINECS: European INventory of Existing Commercial chemical Substances ELINCS: European List of Notified Chemical Substances NLP: No-Longer Polymers ENCS: Existing and New Chemical Substances Inventory KECI: Korea Existing Chemicals Inventory NZIoC: New Zealand Inventory of Chemicals PICCS: Philippine Inventory of Chemicals and Chemical Substances TSCA: Toxic Substances Control Act TCSI: Taiwan Chemical Substance Inventory INSQ: Inventario Nacional de Sustancias Químicas NCI: National Chemical Inventory FBEPH: Russian Register of Potentially Hazardous Chemical and Biological Substances

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Page 9 of 9

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