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

1.1 Product identifier
Material Name
FLASH Pearl
Registration status
This material is imported in amounts < 1 tonne/annum. This product and its components are not subject to REACH.
1.2 Relevant identified uses of the substance or mixture and uses advised against
Identified uses
Tooth surface polishing
Uses advised against
None known
1.3 Details of the supplier of the safety data sheet
NSK Europe GmbH
Elly-Beinhorn-Strasse 8
65760 Eschborn
Germany
Phone: +49 6196 77606 0
E-mail: info@nsk-europe.de

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture
Classification according to Regulation (EC) No 1272/2008 [CLP]
None needed according to classification criteria.
2.2 Label elements
Labeling according to Regulation (EC) No. 1272/2008 [CLP]
Hazard symbols
None needed according to classification criteria.
Signal word
None needed according to classification criteria
Hazard statements
None needed according to classification criteria.
Precautionary statements
Prevention
None needed according to classification criteria.
Response
None needed according to classification criteria.
Storage
None needed according to classification criteria.
Disposal
P501 Dispose of contents/container in accordance with local/regional/national/international regulations.
2.3 Other hazards
May form combustible dust concentrations in air.

SECTION 3: Composition / information on ingredients

3.2 MIXTURE

CAS EC No Registration No	Component Name Synonyms	1272/2008 (CLP)	Percent

471-34-1 207-439-9 --	Calcium carbonate	--	96
6484-52-2 229-347-8 --	Ammonium nitrate	--	1.5
1633-05-2 216-643-7 --	Strontium carbonate	--	1
7789-75-5 232-188-7 --	Calcium fluoride	--	0.5
10124-37-5 233-332-1 --	Calcium nitrate	--	0.5
7758-87-4 231-840-8 --	Tricalcium phosphate	--	0.5

SECTION 4: First aid measures

4.1 Description of first aid measures
Inhalation
Remove person to fresh air and keep comfortable for breathing. If breathing is difficult, oxygen should be administered by qualified personnel. Call a POISON CENTER or doctor/physician.
Skin
Wash with plenty of soap and water. Take off immediately all contaminated clothing and wash it before reuse. If skin irritation occurs: Get medical advice/attention.
Eyes
Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
Ingestion
Rinse mouth. Call a POISON CENTER or doctor/physician.
4.2 Most Important Symptoms/Effects
Acute
Mechanical irritation may occur.
Delayed
No adverse effects expected.
4.3 Indication of Immediate Medical Attention and Special Treatment
No information on significant adverse effects.
Note to Physicians
Treat symptomatically and supportively.

SECTION 5: Firefighting measures

5.1 Extinguishing media
Suitable extinguishing media
Use extinguishing agent suitable for type of surrounding fire.
Unsuitable Extinguishing Media
Do not use high-pressure water streams.

5.2 Special hazards arising from the substance or mixture
Irritating and toxic gases or fumes may be released during a fire. Avoid generating dust; fine dust dispersed in air in sufficient concentrations, and in the presence of an ignition source is a potential dust explosion hazard. Dust can be a fire or explosion hazard. Possibility of explosion exists under dusty conditions.
Combustion
calcium oxide, oxides of carbon
5.3 Advice for firefighters
Apply extinguishing media carefully to avoid creating airborne dust. Move container from fire area if it can be done without risk. Keep unnecessary people away, isolate hazard area and deny entry. May explode when heated. Cool containers with flooding quantities of water until well after fire is out. Prevent entry into sewers, drains, ditches, underground or confined spaces and waterways. Avoid inhalation of material or combustion by-products.
Protective Equipment and Precautions for Firefighters
Wear full protective fire fighting gear including self contained breathing apparatus (SCBA) for protection against possible exposure.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures
Wear personal protective clothing and equipment, see Section 8.
6.2 Environmental precautions
Avoid release to the environment.
6.3 Methods and Materials for Containment and Cleaning Up
Dust deposits should not be allowed to accumulate on surfaces, as these may form an explosive mixture if they are released into the atmosphere in sufficient concentration. Avoid dispersal of dust in the air (i.e., clearing dust surfaces with compressed air). Non-sparking tools should be used when working with dust. Sweep up or gather material and place in appropriate container for disposal. Wash contaminated areas with soap and water. Collect material into suitable, loosely covered container for disposal. Prevent entry into waterways, sewers, basements, or confined areas.
6.4 Reference to other sections
See Section 7 for Handling and Storage. See Section 8 for Personal Protective Equipment. See Section 13 for Disposal Guidance.

SECTION 7: Handling and storage

7.1 Precautions for safe handling
Minimize dust generation and accumulation. Routine housekeeping should be instituted to ensure that dusts do not accumulate on surfaces. Do not eat, drink, or smoke when using this product. Dry powders can build static electricity charges when subjected to the friction of transfer and mixing operations. Provide adequate precautions, such as electrical grounding and bonding, or inert atmospheres. To avoid fire or explosion, ground and bond container and receiving equipment (and ground personnel) before transferring material. Avoid dusting when handling and avoid all possible sources of ignition (spark or flame). Avoid significant deposits of material, especially on horizontal surfaces, which may become airborne and form combustible dust clouds and may contribute to secondary explosions. Wear protective gloves/protective clothing/eye protection/face protection. Wash thoroughly after handling.
7.2 Conditions for safe storage, including any incompatibilities
None needed according to classification criteria.
Further information on storage conditions: Storage and handle in accordance with all current regulations and standards. Store in a dry place. Prevent dust accumulation. Keep away from heat, open flame.
Incompatible Materials
No information.
7.3 Specific end use(s)
Tooth surface polishing

SECTION 8: Exposure controls/personal protection

8.1 Control parameters
Component Exposure Limits

Calcium carbonate	**471-34-1**
Belgium:	10 mg/m3 TWA (related to Limestone)
Bulgaria	1 fiber/cm3 TWA (containing <2% free Crystalline silicon dioxide in respirable fibrous particles fraction) respirable fraction, fibers ; 10 mg/m3 TWA (containing <2% free Crystalline silicon dioxide in respirable fibrous particles fraction) inhalable fraction (related to Limestone)
Croatia	4 mg/m3 TWA [GVI] respirable dust ; 10 mg/m3 TWA [GVI] total dust (related to Limestone)
Czech Republic	10 mg/m3 TWA dust (related to Limestone)
Estonia	10 mg/m3 TWA ; 5 mg/m3 TWA respirable dust (related to Limestone)
France:	10 mg/m3 TWA [VME]
Greece:	10 mg/m3 TWA inhalable fraction ; 5 mg/m3 TWA respirable fraction (related to Limestone)
Hungary	10 mg/m3 TWA [AK] (related to Limestone)
Ireland:	10 mg/m3 TWA total inhalable dust ; 4 mg/m3 TWA respirable dust (related to Limestone)
	30 mg/m3 STEL (calculated) total inhalable dust ; 12 mg/m3 STEL (calculated) respirable dust (related to Limestone)
Latvia	6 mg/m3 TWA
Poland	10 mg/m3 TWA [NDS] inhalable fraction
Portugal:	10 mg/m3 TWA [VLE-MP] particulate matter containing no Asbestos and <1% Crystalline silica
Romania	10 mg/m3 TWA (Quartz <=1%) dust, inhalable fraction (related to Limestone)
Switzerland:	3 mg/m3 TWA [MAK]
United Kingdom:	10 mg/m3 TWA inhalable dust ; 4 mg/m3 TWA respirable dust (related to Limestone)
	30 mg/m3 STEL (calculated) inhalable dust ; 12 mg/m3 STEL (calculated) respirable dust (related to Limestone)
Ammonium nitrate	**6484-52-2**
Czech Republic	10 mg/m3 TWA dust
Strontium carbonate	**1633-05-2**
Bulgaria	1 mg/m3 TWA as Sr (related to Strontium compounds)

Lithuania	6 mg/m3 TWA [IPRD]
Calcium fluoride	**7789-75-5**
ACGIH:	2.5 mg/m3 TWA as F (related to Fluorides)
Bulgaria	3 mg/m3 TWA (containing <2% free Crystalline silicon in respirable fraction) respirable fraction ; 6 mg/m3 TWA (containing <2% free Crystalline silicon in respirable fraction) inhalable fraction (related to Fluorite (CaF2))
Denmark.	2.5 mg/m3 TWA as F except those mentioned elsewhere in the list (related to Fluorides)
Estonia	2.5 mg/m3 TWA (related to Fluorides)
Germany (TRGS):	1 mg/m3 TWA AGW (The risk of damage to the embryo or fetus can be excluded when AGW and BGW values are observed) as F inhalable fraction exposure factor 8 (related to Fluorides)
Germany (DFG):	1 mg/m3 TWA MAK inhalable fraction as F (related to Fluorides)
	skin notation (related to Fluorides)
Greece:	2.5 mg/m3 TWA as F (related to Fluorides)
Hungary	2.5 mg/m3 TWA [AK] as F (related to Fluorides)
	10 mg/m3 STEL [CK] (Substances with European indicative limits (96/94/EC, 2000/39/EC, 2006/15/EC, 2009/161/EU), which currently has no peak limit concentration. In these cases, Annex 3.1. should be used exercised) as F (related to Fluorides)
	potential for cutaneous absorption (related to Fluorides)
Ireland:	2.5 mg/m3 TWA (related to Fluorides)
	7.5 mg/m3 STEL (calculated) (related to Fluorides)
Italy:	2.5 mg/m3 TWA as F (related to Fluorides)
Latvia	0.5 mg/m3 TWA as F
	2.5 mg/m3 STEL as F
Lithuania	2.5 mg/m3 TWA [IPRD] (except Hydrogen fluoride) as F (related to Fluorides)
Poland	2 mg/m3 TWA [NDS] as F (related to Fluorides)
Portugal:	2.5 mg/m3 TWA [VLE-MP] as F (related to Fluorides)
Romania	1 mg/m3 TWA
	2 mg/m3 STEL
Slovak Republic	2.5 mg/m3 TWA (related to Fluorides)

Slovenia	2.5 mg/m3 TWA (total value, with Hydrogen fluoride) (related to Fluorides)
Sweden:	2 mg/m3 TLV (for exposure to a mixture of fluorides and hydrogen fluorides, the level limit value for fluorides shall be applied) as F (related to Fluorides)

Component Biological Exposure Limits

Calcium fluoride	**7789-75-5**
ACGIH:	2 mg/l Medium: urine Time: prior to shift Parameter: Fluoride (background, nonspecific); 3 mg/l Medium: urine Time: end of shift Parameter: Fluoride (background, nonspecific) (related to Fluorides)
Czech Republic	2 mg/l Medium: urine Time: prior to shift Parameter: Fluoride (background, nonspecific); 3 mg/l Medium: urine Time: end of shift Parameter: Fluoride (background, nonspecific) (related to Fluorides)
France	3 mg/g creatinine Medium: urine Time: beginning of shift Parameter: Fluorides (Background noise on non-exposed subjects, Non-specific (observed after the exposure to other substances)); 10 mg/g creatinine Medium: urine Time: end of shift Parameter: Fluorides (Background noise on non-exposed subjects, Non-specific (observed after the exposure to other substances)) (related to Fluorides)
Italy	2 mg/g Creatinine Medium: urine Sampling Time: prior to shift Parameter: Fluorides (Background, nonspecific); 3 mg/g Creatinine Medium: urine Sampling Time: end of shift Parameter: Fluorides (Background, nonspecific) (related to Fluorides)
Romania	5 mg/g Creatinine Medium: urine Time: end of shift Parameter: Fluorine (related to Fluorine compounds)
Switzerland	4 mg/l Medium: urine Time: end of shift Parameter: Fluorides [X] (related to Fluorides)

Derived No Effect Levels (DNELs)
No DNELs available.
Predicted No Effect Concentrations (PNECs)
No PNECs available.
8.2 Exposure Controls
Engineering controls
It is recommended that all dust control equipment such as local exhaust ventilation and material transport systems involved in handling of these products contain explosion relief vents or an explosion suppression system or an oxygen-deficient environment. Ensure that dust-handling systems (such as exhaust ducts, dust collectors, vessels, and processing equipment) are designed in a manner to prevent the escape of dust into the work area (i.e., there is no leakage from the equipment). Use only appropriately classified electrical equipment and powered industrial trucks.
Eye/face protection
Wear chemical safety goggles (EN 166).
Skin Protection
Possibility of explosion exists under dusty conditions. Wear fire-resistant protective clothing.
Respiratory Protection
If airborne contaminant levels exceed recommended exposure limits, use CEN/EN Standard applicable respiratory protection appropriate for employee exposure levels. Consult with a health and safety professional for specific respirators appropriate for your use.
Glove Recommendations
Wear appropriate chemical resistant gloves (EN 374).
Environmental exposure controls
Avoid release to the environment.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance	gray powder	**Physical State**	solid
Odor	odorless	**Color**	gray
Odor Threshold	Not available	**pH**	ca. 8.5 (10%)
Melting Point	Not available	**Boiling Point**	Not available
Boiling Point Range	Not available	**Freezing point**	Not available
Evaporation Rate	Not available	**Flammability (solid, gas)**	Not available
Autoignition Temperature	(Not applicable)	**Flash Point**	Not available
Lower Explosive Limit	Not available	**Decomposition temperature**	Not available
Upper Explosive Limit	Not available	**Vapor Pressure**	Non-volatile
Vapor Density (air=1)	Not available	**Specific Gravity (water=1)**	ca. 2.5
Water Solubility	Slightly soluble	**Partition coefficient: n-octanol/water**	Not available
Viscosity	Not applicable	**Kinematic viscosity**	Not available
Solubility (Other)	Not available	**Density**	ca. 2.5 g/cm3
Physical Form	powder	**Molecular Weight**	Not available

9.2 Other information
Solvent Solubility
Soluble
Soluble in acids.

SECTION 10: Stability and reactivity

10.1 Reactivity
May ignite upon contact with fluorine gas.
10.2 Chemical stability
Stable under normal conditions of use.
10.3 Possibility of hazardous reactions
Hazardous polymerization will not occur.
10.4 Conditions to avoid
Not available.
10.5 Incompatible materials
Not available.
10.6 Hazardous decomposition products
calcium oxide, oxides of carbon

SECTION 11: Toxicological information

11.1 Information on toxicological effects
Component Analysis - LD50/LC50

The components of this material have been reviewed in various sources and the following selected endpoints are published:
Calcium carbonate (471-34-1)
Oral LD50 Rat 6450 mg/kg
Ammonium nitrate (6484-52-2)
Oral LD50 Rat 2217 mg/kg
Inhalation LC50 Rat >88.8 mg/L 4 h
Strontium carbonate (1633-05-2)
Oral LD50 Rat >14 g/kg
Calcium fluoride (7789-75-5)
Oral LD50 Rat 4250 mg/kg
Calcium nitrate (10124-37-5)
Oral LD50 Rat 302 mg/kg
Product Toxicity Data
Acute Toxicity Estimate

Inhalation - Dust and Mist	> 5 mg/L
Oral	> 2000 mg/kg

Irritation/Corrosivity Data
Mechanical irritation may occur.
Respiratory Sensitization
No information available for product.
Dermal Sensitization
No information available for the product.
Germ Cell Mutagenicity
No information available for the product.
Tumorigenic Data
No information available for the product.
Component Carcinogenicity

Ammonium nitrate	**6484-52-2**
IARC:	Monograph 94 [2010] (covers ingested nitrates under conditions that result in endogenous nitrosation) (related to Nitrate compounds) (Group 2A (probably carcinogenic to humans))
Calcium fluoride	**7789-75-5**
IARC:	Supplement 7 [1987] (related to Fluorite (CaF2)) (Group 3 (not classifiable))
Calcium nitrate	**10124-37-5**
IARC:	Monograph 94 [2010] (covers ingested nitrates under conditions that result in endogenous nitrosation) (related to Nitrate compounds) (Group 2A (probably carcinogenic to humans))

Toxicity for reproduction
No information available for the product.
Specific Target Organ Toxicity - Single Exposure
No target organs identified.
Specific Target Organ Toxicity - Repeated Exposure
No target organs identified.
Aspiration hazard
Not expected to be an aspiration hazard.

SECTION 12: Ecological information

12.1 Toxicity
Component Analysis - Aquatic Toxicity

Calcium nitrate	**10124-37-5**
Fish:	LC50 96 h Lepomis macrochirus 10000 mg/L [static]

12.2 Persistence and degradability
No information available for product.
12.3 Bioaccumulative potential
No information available for product.
12.4 Mobility in soil
No information available for product.
12.5 Results of PBT and vPvB assessment
No information available for product.
12.6 Other adverse effects
No additional information available for the product.

SECTION 13: Disposal considerations

13.1 Waste treatment methods
Dispose of waste in accordance with Directive 2008/98/EC, covering waste and dangerous waste.
Waste codes/waste designations according to LoW. EWC-code: 18 01 07.
Prevent entry into sewers, drains, ditches, underground or confined spaces and waterways.
Since emptied containers retain material residue, follow safe handling/label warnings even after container is emptied.
Dispose of solid waste/container in accordance with local/state/national/international regulations.

SECTION 14: Transport information

		ADR	RID	ICAO	IATA	ADN	IMDG
14.1	UN Number	Not regulated	Not regulated	Not regulated	Not regulated	Not regulated	Not regulated
14.2	UN Proper Shipping Name	--	--	--	--	--	--
14.3	Transport Hazard Class(es)	--	--	--	--	--	--
14.4	Packing Group	--	--	--	--	--	--
14.5	Environmental Hazards	--	--	--	--	--	--
14.6	Special Precautions For User	--	--	--	--	--	--
14.7	Transport in Bulk According to Annex II of MARPOL and the IBC Code	--	--	--	--	--	--
14.8	Further information	--	--	--	--	--	--

International Bulk Chemical Code
This material contains one or more of the following chemicals required by the IBC Code to be identified as dangerous chemicals in bulk.

Ammonium nitrate	**6484-52-2**
IBC Code:	Category Z (<=93% solution)

SECTION 15: Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture
REACH Candidate List of Substances of Very High Concern (SVHC) for Authorization (Article 59(1)) - Reg. (EU) No. 1907/2006
No components of this material are listed.
EU - REACH (1907/2006) - Annex XVII Restrictions of Certain Dangerous Substances, Mixtures and Articles
REACH List of Substances Subject to Restriction (Annex XVII) - Reg. (EU) No. 1907/2006
This list includes substances subject to Restriction. Under REACH, these substances are subject to restrictions on manufacture, placing on the market and use of certain dangerous substances, mixtures and articles
Ammonium nitrate (6484-52-2)
Use restricted. See item 58 (Conditions of restrictions 27 June 2010)
EU - Substances Depleting the Ozone layer (1005/2009)
No components of this material are listed.
EU - Persistent Organic Pollutants (850/2004)
No components of this material are listed.
EU - Export and Import Restrictions (689/2008) - Chemicals and Articles Subject to Export Ban
No components of this material are listed.
EU - Seveso III Directive (2012/18/EU) - Qualifying Quantities of Dangerous Substances

Ammonium nitrate	**6484-52-2**
Lower-Tier Requirements	350 tonne (technical grade ;including aqueous ammonium nitrate solutions in which the concentration of ammonium nitrate is >80% by weight)
Higher-Tier Requirements	2500 tonne (technical grade ;including aqueous ammonium nitrate solutions in which the concentration of ammonium nitrate is >80% by weight)

EU - Plant Protection Products (1107/2009/EC)

Calcium carbonate	**471-34-1**
Active Substances	Only uses as repellent may be authorised (important details in Commission Implementing Regulation 2017/195/EU); Conditions of use shall include, where appropriate, risk mitigation measures. The notifier shall submit confirmatory information as regards further data on the specification of the technical material, analytical methods for the determination of Calcium carbonate in the representative formulation and of the impurities in the technical material (important details in Commission Implementing Regulation 2017/195/EU)

EU - Biocides (528/2012/EU)
No components of this material are listed.
EU – Water Framework Directive (2000/60/EC)
No components of this material are listed.
EU - Limitation of Emissions of Volatile Organic Compounds Due to the Use of Organic Solvents in Certain Activities and Installations (1999/13/EC)
No components of this material are listed.
EU - Detergent Regulation (648/2004/EC)

Calcium fluoride	**7789-75-5**

Consumer Labeling Requirements	Listed at concentrations exceeding 0.15% by weight (substance pursuant to Directive 76/768/EEC Annex III Part 1)
Tricalcium phosphate	**7758-87-4**
Consumer Labeling Requirements	Listed at concentrations exceeding 0.2% by weight (related to Phosphates)

Germany Regulations
Germany Water Classification - Product
hazard class 2 - hazard to waters
* Self-classification
Germany Water Classification - Component
Calcium carbonate (471-34-1)
ID Number 317 , not considered hazardous to water
Ammonium nitrate (6484-52-2)
ID Number 212 , hazard class 1 - low hazard to waters
Strontium carbonate (1633-05-2)
ID Number 803 , not considered hazardous to water
Calcium fluoride (7789-75-5)
ID Number 804 , hazard class 1 - low hazard to waters
Calcium nitrate (10124-37-5)
ID Number 321 , hazard class 1 - low hazard to waters
Denmark Regulations
No components of this material are listed.
Component Analysis - Inventory
Calcium carbonate (471-34-1)

US	CA	EU	AU	PH	JP - ENCS	JP - ISHL	KR KECI - Annex 1	KR KECI - Annex 2	KR - REACH CCA	CN	NZ	MX	TW	VN (Draft)
Yes	DSL	EIN	Yes	Yes	Yes	Yes	Yes	No	No	Yes	Yes	Yes	Yes	Yes

Ammonium nitrate (6484-52-2)

US	CA	EU	AU	PH	JP - ENCS	JP - ISHL	KR KECI - Annex 1	KR KECI - Annex 2	KR - REACH CCA	CN	NZ	MX	TW	VN (Draft)
Yes	DSL	EIN	Yes	Yes	Yes	Yes	Yes	No	No	Yes	Yes	Yes	Yes	Yes

Strontium carbonate (1633-05-2)

US	CA	EU	AU	PH	JP - ENCS	JP - ISHL	KR KECI - Annex 1	KR KECI - Annex 2	KR - REACH CCA	CN	NZ	MX	TW	VN (Draft)
Yes	DSL	EIN	Yes	Yes	Yes	Yes	Yes	No	No	Yes	Yes	Yes	Yes	Yes

Calcium fluoride (7789-75-5)

US	CA	EU	AU	PH	JP - ENCS	JP - ISHL	KR KECI - Annex 1	KR KECI - Annex 2	KR - REACH CCA	CN	NZ	MX	TW	VN (Draft)
Yes	DSL	EIN	Yes	Yes	Yes	Yes	Yes	No	No	Yes	Yes	Yes	Yes	Yes

Calcium nitrate (10124-37-5)

US	CA	EU	AU	PH	JP - ENCS	JP - ISHL	KR KECI - Annex 1	KR KECI - Annex 2	KR - REACH CCA	CN	NZ	MX	TW	VN (Draft)
Yes	DSL	EIN	Yes	Yes	Yes	Yes	Yes	No	No	Yes	Yes	Yes	Yes	Yes

Tricalcium phosphate (7758-87-4)

US	CA	EU	AU	PH	JP - ENCS	JP - ISHL	KR KECI - Annex 1	KR KECI - Annex 2	KR - REACH CCA	CN	NZ	MX	TW	VN (Draft)
Yes	DSL	EIN	Yes	Yes	Yes	Yes	Yes	No	No	Yes	Yes	Yes	Yes	Yes

15.2 Chemical Safety Assessment
No chemical safety assessment has been carried out for the substance/mixture.

SECTION 16: Other information

16.1 Indication of changes
New SDS
Preparation Date
29 June 2018
16.2 Key / Legend
ACGIH - American Conference of Governmental Industrial Hygienists; ADR - European Road Transport; AU - Australia; BOD - Biochemical Oxygen Demand; C - Celsius; CA - Canada; CA/MA/MN/NJ/PA - California/Massachusetts/Minnesota/New Jersey/Pennsylvania*; CAS - Chemical Abstracts Service; CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act; CFR - Code of Federal Regulations (US); CLP - Classification, Labelling, and Packaging; CN - China; CPR - Controlled Products Regulations; DFG - Deutsche Forschungsgemeinschaft; DOT - Department of Transportation; DSD - Dangerous Substance Directive; DSL - Domestic Substances List; EC – European Commission; EEC - European Economic Community; EIN - European Inventory of (Existing Commercial Chemical Substances); EINECS - European Inventory of Existing Commercial Chemical Substances; ENCS - Japan Existing and New Chemical Substance Inventory; EPA - Environmental Protection Agency; EU - European Union; F - Fahrenheit; F - Background (for Venezuela Biological Exposure Indices); IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; ICAO - International Civil Aviation Organization; IDL - Ingredient Disclosure List; IDLH - Immediately Dangerous to Life and Health; IMDG - International Maritime Dangerous Goods; ISHL - Japan Industrial Safety and Health Law; IUCLID - International Uniform Chemical Information Database; JP - Japan; Kow - Octanol/water partition coefficient; KR KECI Annex 1 - Korea Existing Chemicals Inventory (KECI) / Korea Existing Chemicals List (KECL); KR KECI Annex 2 - Korea Existing Chemicals Inventory (KECI) / Korea Existing Chemicals List (KECL) , KR - Korea; LD50/LC50 - Lethal Dose/ Lethal Concentration; LEL - Lower Explosive Limit; LLV - Level Limit Value; LOLI - List Of LIsts™ - ChemADVISOR's Regulatory Database; MAK

- Maximum Concentration Value in the Workplace; MEL - Maximum Exposure Limits; MX – Mexico; Ne- Non-specific; NFPA - National Fire Protection Agency; NIOSH - National Institute for Occupational Safety and Health; NJTSR - New Jersey Trade Secret Registry; Nq - Non-quantitative; NSL – Non-Domestic Substance List (Canada); NTP - National Toxicology Program; NZ - New Zealand; OSHA - Occupational Safety and Health Administration; PEL- Permissible Exposure Limit; PH - Philippines; RCRA - Resource Conservation and Recovery Act; REACH- Registration, Evaluation, Authorisation, and restriction of Chemicals; RID - European Rail Transport; SARA - Superfund Amendments and Reauthorization Act; Sc - Semi-quantitative; STEL - Short-term Exposure Limit; TCCA – Korea Toxic Chemicals Control Act; TDG - Transportation of Dangerous Goods; TLV - Threshold Limit Value; TSCA - Toxic Substances Control Act; TW – Taiwan; TWA - Time Weighted Average; UEL - Upper Explosive Limit; UN/NA - United Nations /North American; US - United States; VLE - Exposure Limit Value (Mexico); VN (Draft) - Vietnam (Draft); WHMIS - Workplace Hazardous Materials Information System (Canada)

16.3 Key literature references and sources for data

Available upon request.

16.4 Methods Used for Classification of Mixture According to Regulation (EC) No 1272/2008

Available upon request.

16.5 Relevant H- and EUH-phrases (Number and full text) and Notes

None needed according to classification criteria

16.6 Training advice

Read the Safety Data Sheet before handling product.

16.7 Further Information

Disclaimer:

The information set forth in this Safety Data Sheet does not purport to be all-inclusive and should be used only as a guide. While the information and recommendations set forth herein are believed to be accurate, the company makes no warranty regarding such information and recommendations and disclaims all liability from reliance thereon.