

Safety data sheet

according to Regulation EC 1907/2006 (REACH) and subsequent amendment Regulation EU 830/2015

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

1.1. Product identifier

Product name: Flavorah Guanabana

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

Description/Use	Flavouring		
Intended use:	Industrial	Professional	Consumer
Flavor concentrate		X	X

1.3. Details of the supplier of the Safety Data Sheet

Name: Flavorah

Full address: McKnight Standard LLC 17404 147th St. SE Ste. N Monroe, WA 98272

District and Country: United States of America - 18443588273

E-mail address of the competent person responsible for the Safety Data Sheet: service@flavorah.com

1.4. Emergency telephone number

For urgent inquiries refer to: 18443588273; service@flavorah.com; NHS 111

SECTION 2. Hazards identification

2.1. Classification of the substance or mixture

The product is classified as hazardous pursuant to the provisions set forth in EC Regulation 1272/2008 (CLP) (and subsequent amendments and supplements). The product thus requires a Safety Data Sheet that complies with the provisions of EC Regulation 1907/2006 and subsequent amendments. Any additional information concerning the risks for health and/or the environment are given in sections 11 and 12 of this sheet.

Hazard classification and indication:

Flam. Liq. 3	H226	Flammable liquid and vapour
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2.2. Label elements

Hazard labelling pursuant to EC Regulation 1272/2008 (CLP) and subsequent amendments and supplements

Hazard pictograms:



Signal words: Warning

Hazard statements:

H226	Flammable liquid and vapour
EUH208	Contains trans 2 hexenal, beta-caryophyllene, beta-Pinene, Ylang ylang oil, Orange sweet oil, Methyl cinnamate, Linalool, 5,6-dihydro-6-pentyl-2H-pyran-2-one . May produce an allergic reaction.

Precautionary statements:

P101	If medical advice is needed, have product container or label at hand.
P102	Keep out of reach of children.
P210	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P240	Ground and bond container and receiving equipment.
P241	Use explosion-proof [electrical/ventilating/lighting/ ...] equipment.
P242	Use non-sparking tools.
P303+P361+P353	IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or shower].
P370+P378	In case of fire: Use ... to extinguish.
P501	Dispose of contents/container in accordance with local regulations.

Contains: -

Product not intended for uses provided for by Dir.2004/42/CE.

2.3. Other hazards

On the basis of available data, the product does not contain any PBT or vPvB in percentage greater than 0.1%.

SECTION 3. Composition/information on ingredients

3.1. Substances

Information not relevant

3.2. Mixtures

Contains:

The full wording of hazard (H) phrases is given in section 16 of the sheet.

Identification	%	Classification 1272/2008 (CLP)
Ethanol	33.71 < x < 42.14	Flam. Liq. 2 H225

CAS: 64-17-5

EC: 200-578-6

INDEX: 603-002-00-5

REACH: 01-2119457610-43-XXXX

Identification	%	Classification 1272/2008 (CLP)
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Pentan-2-one	0.09 < x < 0.10	Acute Tox. 4 H302; Eye Irrit. 2 H319; Flam. Liq. 2 H225
CAS: 107-87-9		
EC: 203-528-1		
INDEX: -		
REACH: 01-2119988840-24-XXXX		
Identification	%	Classification 1272/2008 (CLP)
Methyl butyrate	0.09 < x < 0.10	Skin Irrit. 2 H315; Flam. Liq. 2 H225
CAS: 623-42-7		
EC: 210-792-1		
INDEX: -		
REACH: -		
Identification	%	Classification 1272/2008 (CLP)
beta-caryophyllene	0.09 < x < 0.10	Skin Sens. 1B H317; Asp. Tox. 1 H304
CAS: 87-44-5		
EC: 201-746-1		
INDEX: -		
REACH: 01-2120745237-53-XXXX		
Identification	%	Classification 1272/2008 (CLP)
beta-Pinene	0.09 < x < 0.10	Skin Irrit. 2 H315; Eye Irrit. 2 H319; Skin Sens. 1 H317; Asp. Tox. 1 H304; Aquatic Acute 1 H400; Aquatic Chronic 1 H410; Flam. Liq. 3 H226
CAS: 127-91-3		
EC: 204-872-5		
INDEX: -		
REACH: 01-2119519230-54-XXXX		
Identification	%	Classification 1272/2008 (CLP)
5,6-dihydro-6-pentyl-2H-pyran-2-one	0.09 < x < 0.10	Skin Irrit. 2 H315; Eye Irrit. 2 H319; Skin Sens. 1B H317
CAS: 54814-64-1		
EC: 259-359-9		
INDEX: -		
REACH: -		
Identification	%	Classification 1272/2008 (CLP)
Isoamyl acetate	0.09 < x < 0.10	Flam. Liq. 3 H226
CAS: 123-92-2		
EC: 204-662-3		
INDEX: 607-130-00-2		
REACH: 01-2119548408-32-XXXX		

Identification	%	Classification 1272/2008 (CLP)
Methyl cinnamate	0.09 < x < 0.10	Skin Sens. 1B H317
CAS: 103-26-4		
EC: 203-093-8		
INDEX: -		
REACH: 01-2119979458-16-XXXX		
Identification	%	Classification 1272/2008 (CLP)
trans 2 hexenal	0.09 < x < 0.10	Acute Tox. 4 H302; Acute Tox. 3 H311; Eye Irrit. 2 H319; Skin Sens. 1B H317; Aquatic Chronic 2 H411; Flam. Liq. 3 H226
CAS: 6728-26-3		
EC: 229-778-1		
INDEX: -		
REACH: 01-2120770494-48-XXXX		
Identification	%	Classification 1272/2008 (CLP)
Orange sweet oil	0.09 < x < 0.10	Skin Irrit. 2 H315; Skin Sens. 1 H317; Asp. Tox. 1 H304; Aquatic Acute 1 H400; Aquatic Chronic 1 H410; Flam. Liq. 3 H226
CAS: 8008-57-9		
EC: 600-006-9		
INDEX: -		
REACH: -		
Identification	%	Classification 1272/2008 (CLP)
Ylang ylang oil	0.09 < x < 0.10	Skin Irrit. 2 H315; Eye Irrit. 2 H319; Skin Sens. 1 H317; Asp. Tox. 1 H304; Aquatic Chronic 3 H412
CAS: 8006-81-3		
EC: 616-893-0		
INDEX: -		
REACH: 01-2120760178-50-XXXX		
Identification	%	Classification 1272/2008 (CLP)
Hexanoic acid	0.09 < x < 0.10	Acute Tox. 3 H311; Skin Corr. 1C H314; Eye Dam. 1 H318
CAS: 142-62-1		
EC: 205-550-7		
INDEX: -		
REACH: 01-2119978228-24-XXXX		
Identification	%	Classification 1272/2008 (CLP)
Linalool	0.09 < x < 0.10	Skin Sens. 1B H317
CAS: 78-70-6		
EC: 201-134-4		

INDEX: 603-235-00-2
REACH: 01-2119474016-42-XXXX
SECTION 4. First aid measures
4.1. Description of first aid measures
EYES: Remove contact lenses, if present. Wash immediately with plenty of water for at least 15 minutes, opening the eyelids fully. If problem persists, seek medical advice. SKIN: Remove contaminated clothing. Rinse skin with a shower immediately. Get medical advice/attention immediately. Wash contaminated clothing before using again. INHALATION: Remove to open air. If the subject stops breathing, administer artificial respiration. Get medical advice/attention immediately. INGESTION: Get medical advice/attention immediately. Do not induce vomiting. Do not administer anything not explicitly authorized by a doctor. PROTECTION MEASURES FOR FIRST RESPONDERS: Concerning PPE suitable for first aid operations, please refer to section 8.2 of this safety data sheet.
4.2. Most important symptoms and effects, both acute and delayed
Specific information on symptoms and effects caused by the product are unknown. For symptoms and effects caused by the contained substances, see chap. 11.
4.3. Indication of any immediate medical attention and special treatments needed
Information not available
SECTION 5. Firefighting measures
5.1. Exstinguishing media
SUITABLE EXTINGUISHING EQUIPMENT
The extinguishing equipment should be of the conventional kind: carbon dioxide, foam, powder and water spray.
UNSUITABLE EXTINGUISHING EQUIPMENT
Do not use water jets. The water is not effective to extinguish a fire, however it can be used to cool the closed containers next to the flame and prevent explosion.
5.2. Special hazards arising from the substance or mixture
HAZARDS CAUSED BY EXPOSURE IN THE EVENT OF FIRE
Do not breathe combustion products
5.3. Advice for firefighters
GENERAL INFORMATION
Use jets of water to cool the containers to prevent product decomposition and the development of substances potentially hazardous for health. Always wear full fire prevention gear. Collect extinguishing water to prevent it from drying into the sewer system. Dispose of contaminated water used for extinction and the remains of the fire according to applicable regulations.
SPECIAL EQUIPMENTS FOR FIREFIGHTERS
Normal firefighting clothing i.e. fire kit (EN 469), gloves (EN 659) and boots (HO specification A29 and A30) in combination with self

contained open circuit positive pressure compressed air breathing apparatus (EN 137).

SECTION 6. Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Block the leakage if there is no hazard.

Wear suitable protective equipment (including personal protective equipment referred to under Section 8 of the Safety Data Sheet) to prevent any contamination of a skin, eyes and personal clothing. These indications apply for both processing staff and those involved in emergency procedures.

6.2. Environmental precautions

The product must not penetrate into the sewer system or can into contact with surface water or ground water

6.3. Methods and material for containment and cleaning up

Collect the leaked product into a suitable container. If the product is flammable, use explosion-proof equipment. Evaluate the compatibility of the container to be used for, by checking Section 10. Absorb the reminder with inher absorbent material. Make sure the leakage site is well aired. Contaminated material should be disposed in compliance with the provisions set forth in point 13.

6.4. References to other sections

Any information on personal protection and disposal is given in Sections 8 and 13.

SECTION 7. Handling and storage

7.1. Precautions for safe handling

Before handling the product, consult all the other sections of this material Safety Data Sheet. Avoid leakage of the product into the environment. Do not eat, drink or smoke during use. Remove any contaminated clothes and personal protective equipment before entering places in which people eat.

7.2. Conditions for safe storage including any incompatibility

Store only in the original container. Store the containers sealed, in a well ventilated place, away from direct sunlight. Keep containers away from any incompatible material, see Section 10 for details.

7.3. Specific end use(s)

Information not available

SECTION 8. Exposure controls/personal protection

8.1. Control parameters

Substance name: **Ethanol**

CAS: 64-17-5

DNEL/DMEL (Derived No-effect level/Derived minimal effect level): Not available

PNEC (Predicted No-effect Concentration): Not available
WORKPLACE EXPOSURE LIMIT (WEL)
Country: GB (EH40/2005)
Route of exposure: -
8 h [mg/m ³]: 1920
8 h [ppm]: 1000
Short term (15 minutes) [mg/m ³]: -
Short term (15 minutes) [ppm]: -
Substance name: Isoamyl acetate
CAS: 123-92-2
DNEL/DMEL (Derived No-effect level/Derived minimal effect level): Not available
PNEC (Predicted No-effect Concentration): Not available
OCCUPATIONAL EXPOSURE LIMIT (OEL)/ INDICATIVE OEL (IOELV)
Country: EU (Directive 2006/15/EC and subsequent amendments)
Route of exposure: -
8 h [mg/m ³]: 270
8 h [ppm]: 50
Short term (15 minutes) [mg/m ³]: 540
Short term (15 minutes) [ppm]: 100
Substance name: Pentan-2-one
CAS: 107-87-9
DNEL/DMEL (Derived No-effect level/Derived minimal effect level): Not available
PNEC (Predicted No-effect Concentration): Not available
WORKPLACE EXPOSURE LIMIT (WEL)
Country: GB (EH40/2005)
Route of exposure: -
8 h [mg/m ³]: 716
8 h [ppm]: 200
Short term (15 minutes) [mg/m ³]: 895
Short term (15 minutes) [ppm]: 250
Substance name: Propylene glycol
CAS: 57-55-6
DNEL/DMEL (Derived No-effect level/Derived minimal effect level): Not available

PNEC (Predicted No-effect Concentration): Not available	
WORKPLACE EXPOSURE LIMIT (WEL)	
Country: GB (EH40/2005)	
Route of exposure: -	
8 h [mg/m ³]: total vapour and particulates 474; particulates 10	
8 h [ppm]: total vapour and particulates 150; particulates -	
Short term (15 minutes) [mg/m ³]: total vapour and particulates -; particulates -	
Short term (15 minutes) [ppm]: total vapour and particulates -; particulates -	
8.2. Exposure controls	
As the use of adequate technical equipment must always take priority over personal protective equipment, make sure that the workplace is well aired through effective local aspiration. Personal protective equipment must be CE marked, showing that it complies with applicable standards. HAND PROTECTION Protect hands with category III work gloves (see standard EN 374). The following should be considered when choosing work glove material: compatibility, degradation, failure time and permeability. The work gloves' resistance to chemical agents should be checked before use, as it can be unpredictable. The gloves' wear time depends on the duration and type of use. SKIN PROTECTION Wear category I professional long-sleeved overalls and safety footwear (see Directive 89/686/EEC and standard EN ISO 20344). Wash body with soap and water after removing protective clothing. EYE PROTECTION Wear airtight protective goggles (see standard EN 166). In the presence of risks of exposure to splashes or squirts during work, adequate mouth, nose and eye protection should be used to prevent accidental absorption. RESPIRATORY PROTECTION If the threshold value (e.g. TLV-TWA) is exceeded for the substance or one of the substances present in the product, a mask which class must be chosen according to the limit of use concentrations. (see standard EN 14387). In the presence of gases or vapours of various kinds and/or gases or vapours containing particulate (aerosol sprays, fumes, mists, etc.) combined filters are required. Respiratory protection devices must be used if the technical measures adopted are not suitable for restricting the worker's exposure to the threshold values considered. The protection provided by masks is in any case limited. If the substance considered is odourless or its olfactory threshold is higher than the corresponding TLV-TWA and in the case of an emergency, wear open-circuit compressed air breathing apparatus (in compliance with standard EN 137) or external air-intake breathing apparatus (in compliance with standard EN 138). For a correct choice of respiratory protection device, see standard EN 529. ENVIRONMENTAL EXPOSURE CONTROLS The emissions generated by manufacturing processes, including those generated by ventilation equipment, should be checked to ensure compliance with environmental standards.	

SECTION 9. Physical and chemical properties

9.1. Information on basic physical and chemical properties

Appearance:	Liquid
Colour:	Various
Odour:	Characteristic
Odour threshold :	Not available
pH:	3.00 – 6.00

Melting point / freezing point:	Not available
Initial boiling point:	Not available
Boiling range:	Not available
Flash point:	25.6 °C
Evaporation rate:	Not available
Flammability (solid, gas):	Not applicable
Lower inflammability limit:	Not available
Upper inflammability limit:	Not available
Lower explosive limit:	Not available
Upper explosive limit:	Not available
Vapour pressure:	Not available
Vapour density:	Not available
Relative density:	1.0 – 1.15 g/cm3
Solubility:	Not available
Partition coefficient: n-octano/water:	Not available
Auto-ignition temperature:	Not available
Decomposition temperature:	Not available
Viscosity:	Not available
Explosive properties:	Not available
Oxidising properties:	Not available

9.2. Other information

Information not available

SECTION 10. Stability and reactivity

10.1. Reactivity

There are no particular risks of reactions with other substances in normal conditions of use

10.2. Chemical stability

The product is stable in normal conditions of use and storage

10.3. Possibility of hazardous reactions

No hazardous reactions are foreseeable in normal conditions of use and storage

10.4. Condition to avoid

None in particular. However, the usual precautions used for chemical products should be respected

10.5. Incompatible materials

Information not available

10.6. Hazardous decomposition products
Information not available
SECTION 11. Toxicological information
In the absence of experimental data for the product itself, health hazards are evaluated according to the properties of the substances it contains, using the criteria specified in the applicable regulation for classification. It is therefore necessary to take into account the concentration of the individual hazardous substances indicated in section 3, to evaluate the toxicological effects of exposure to the product.
11.1. Information on toxicological effects
Acute toxicity
Does not meet the classification criteria for this hazard class
ATE_{mix} (Inhalation - vapours): not classified (no significant component) ATE_{mix} (Inhalation - mists / powders) of the mixtures: not classified (no significant component) ATE_{mix} (Oral): 241778.69 mg/kg ATE_{mix} (Dermal) of the mixtures: 196542.68 mg/kg Ethanol LD50 Sc 8285 mg/kg bw (Mouse) LD50 Dermal 20000 mg/kg bw (Rabbit) LC50 Inhalation (4h) 116.9 mg/L air (Rat) - OECD 403 ECHA LD50 Oral 6300 mg/kg bw (Rabbit) Isoamyl acetate LD50 Skin >5000 mg/kg bw (Rabbit) LD50 ip 819 mg/kg bw (Rat) Orange sweet oil LD50 Dermal > 5000 mg/kg bw (Rabbit) LD50 Oral > 5000 mg/kg bw (Rat) Hexanoic acid LD50 ip 3180 mg/kg bw (Mouse) LD50 Skin 630 mg/kg bw (Rabbit) LD50 Oral 3000 mg/kg bw (Rat) Linalool LD50 Dermal 2000 mg/kg bw (Rabbit) LD50 Oral 2790 mg/kg bw (Rat) LC50 Inhalation (90 min) > 3.2 mg/L air (Mouse) - ECHA LD50 Ip 340 mg/kg bw (Mouse)
Skin corrosion / Skin irritation
Does not meet the classification criteria for this hazard class
Serious eye damage / Irritation
Does not meet the classification criteria for this hazard class
Respiratory or skin sensitisation
Does not meet the classification criteria for this hazard class
Germ cell mutagenicity
Does not meet the classification criteria for this hazard class



Carcinogenity
Does not meet the classification criteria for this hazard class
Reproductive toxicity
Does not meet the classification criteria for this hazard class
STOT – Single exposure
Does not meet the classification criteria for this hazard class
STOT – Repeated exposure
Does not meet the classification criteria for this hazard class
Aspiration toxicity
Does not meet the classification criteria for this hazard class
SECTION 12. Ecological information
Not being data available, use this product according to good working practices. Avoid littering. Inform the competent authorities, should the product reach waterways or contaminate soil or vegetation.
12.1. Toxicity
Not classified for acute hazards (no significant component). Not classified for chronic hazards (no significant component)
12.2. Persistence and degradability
Information not available
12.3. Bioaccumulative potential
Not determined
12.4. Mobility in soil
Information not available
12.5. Results of PBT and vPvB assessment
On the basis of available data, the product does not contain any PBT or vPvB in percentage greater than 0.1%
12.6. Other adverse effects
Information not available
SECTION 13. Disposal considerations
13.1. Waste treatment methods
Reuse, when possible. Product residues should be considered special hazardous waste. The hazard level of waste containing this product should be evaluated according to applicable regulations. Disposal must be performed through an authorized waste management firm, in compliance with national and local regulations.
CONTAMINATED PACKAGING Contaminated packaging must be recovered or disposed of in compliance with national waste management regulations.

SECTION 14. Transport information			
14.1 UN number			
ADR-RID-ADN-IMDG-IATA/IACAO: UN 1197			
14. 2 UN proper shipping name			
ADR-RID-ADN-IMDG-IATA/IACAO: EXTRACTS, FLAVOURING, LIQUID			
14.3 Transport hazard class(es)			
ADR-RID-ADN-IMDG-IATA/IACAO: 3 (Flammable liquids)			
			
14.4 Packing group			
ADR-RID-ADN-IMDG-IATA/IACAO: III			
14.5 Environmental hazards			
ADR-RID-ADN-IMDG-IATA/IACAO: NO			
14.6 Special precautions for user			
The transport of dangerous goods, including loading and unloading, must be carried out by persons who have received the necessary training as provided for in modal regulations. The load compartment of closed vehicles carrying liquids having a flash-point of not more than 60 °C, shall not be entered by persons carrying portable lighting apparatus other than those so designed and constructed that they cannot ignite any flammable vapours may have penetrated into the interior of the vehicle. The provisions of Chapter 8.4 concerning the supervision of vehicles shall apply when the total mass or volume of these substances in the vehicle exceeds 10 000 kg as packaged goods or 3 000 litres in tanks.			
ADR / RID:	Hazard identification number: 30	Limited Quantities: 5 litres	Tunnel restriction code: (D/E)
IMDG:	EmS: F-E, S-D	Limited Quantities: 5 litres	Stowage category: A
IATA:		Limited Quantities: 1 L	Packing instruction: Y341
	Passenger:	Total net quantity per package: 5 L	Packing instruction: 353
	Cargo:	Total net quantity per package: 60 L	Packing instruction: 364

14.7 Transport in bulk according to Annx II of MARPOL and the IBC Code	
Information not relevant	
SECTION 15. Regulatory information	
15.1. Safety, health and environmental regulatios/legislation specific for the substance or mixture	
Seveso Category - Directive 2012/18/EC:	
P5c FLAMMABLE LIQUIDS Flammable liquids, Categories 2 or 3 not covered by P5a and P5b	
Restriction relating to the product or contained substnace pursuant to Annex XVII to EC Regulation 1907/2006	
Product	
Point	3
Point	40
Substances in Candidate List (Art. 59 REACH)	
On the basis of available data, the product does not contain any SVHC in percentage greater than 0.1%	
Substances subject to authorization (Annex XIV REACH)	
None	
Substances subject to exportation reporting pursuant to (EC) Reg. 649/2012	
None	
Substances subject to the Rotterdam Convention	
None	
Substances subject to the StockholmConvention	
None	
Healthcare controls	
Workers exposed to this chemical agent must not undergo health checks, provided that available risk-assessment data prove that the risks related to the workers' health and safety are modest and that the 98/24/EC directive is respected.	
15.2. Chemical safety assessment	
No chemical safety assessment has been processed for the mixture	
SECTION 16. Other information	
Text of hazard (H) indications mentioned in section 2-3 of the sheet:	
Acute Tox. 3	Acute toxicity, category 3
Acute Tox. 4	Acute toxicity, category 4
Aquatic Acute 1	Hazardous to the aquatic environment — Acute Hazard, Category 1
Aquatic Chronic 1	Hazardous to the aquatic environment — Chronic Hazard, Category 1

Aquatic Chronic 2	Hazardous to the aquatic environment — Chronic Hazard, Category 2
Aquatic Chronic 3	Hazardous to the aquatic environment — Chronic Hazard, Category 3
Asp. Tox. 1	Aspiration hazard, category 1
Eye Dam. 1	Serious eye damage, category 1
Eye Irrit. 2	Eye irritation, category 2
Flam. Liq. 2	Flammable liquid, category 2
Flam. Liq. 3	Flammable liquid, category 3
Skin Corr. 1C	Skin Corrosion, category 1C
Skin Irrit. 2	Skin Irritation, category 2
Skin Sens. 1	Skin Sensitisation, category 1
Skin Sens. 1B	Skin Sensitisation, category 1B
EUH208	Contains ... May produce an allergic reaction.
H225	Highly flammable liquid and vapour
H226	Flammable liquid and vapour
H302	Harmful if swallowed
H304	May be fatal if swallowed and enters airways
H311	Toxic in contact with skin
H314	Causes severe skin burns and eye damage
H315	Causes skin irritation
H317	May cause an allergic skin reaction
H318	Causes serious eye damage
H319	Causes serious eye irritation
H400	Very toxic to aquatic life.
H410	Very toxic to aquatic life with long lasting effects.
H411	Toxic to aquatic life with long lasting effects.
H412	Harmful to aquatic life with long lasting effects.
Classification according to Regulation (EC) Nr. 1272/2008	Classification procedure
Flam. Liq. 3	Calculation method

Legend:

- ADR: European agreement concerning the carriage of dangerous goods by road
- ADN: Internations inland waterways code for dangerous goods
- ATE: Acute toxicity estimate
- ATE_{mix}: Acute toxicity estimate of mixture
- CAS NUMBER: Chemical abstract service number
- CE NUMBER: Identifier in ESIS (European archive of existing substances)
- CLP: EC Regulation 1272/2008
- DNEL: Derived no effect level
- DMEL: Derived minimal effect level
- EmS: Emergency schedule
- GHS: Globally harmonized system of classification and labeling of chemicals
- IATA DGR: International air transport association dangerous goods regulation
- IMDG: International maritime code for dangerous goods
- IMO: International maritime organization
- INDEX NUMBER: Identifier in Annex VI of CLP

- IOELV: Indicative OEL value
- LC50: Lethal concentration 50%
- LD50: Lethal dose 50%
- OEL: Occupational exposure level
- PBT: Persistent bioaccumulative and toxic as REACH Regulation
- PEC: Predicted environmental Concentration
- PEL: Predicted exposure level
- PNEC: Predicted no effect concentration
- REACH: EC Regulation 1907/2006
- RID: Regulation concerning the international transport of dangerous goods by train
- TLV: Threshold Limit Value
- TLV CEILING: Concentration that should not be exceeded during any time of occupational exposure.
- TWA STEL: Short-term exposure limit
- TWA: Time-weighted average exposure limit
- VOC: Volatile organic compounds
- vPvB: Very persistent and very bioaccumulative as for REACH regulation
- WGK: Water hazard classes (German)
- WEL: Workplace Exposure Limit

General bibliography:

1. Regulation (EC) 1907/2006 of the European Parliament (REACH)
2. Regulation (EU) 453/2010 of the European Parliament
3. Regulation (EU) 830/2015 of the European Parliament
4. Regulation (EC) 1272/2008 of the European Parliament (CLP)
5. Regulation (EU) 790/2009 (I Atp. CLP) of the European Parliament
6. Regulation (EU) 286/2011 (II Atp. CLP) of the European Parliament
7. Regulation (EU) 618/2012 (III Atp. CLP) of the European Parliament
8. Regulation (EU) 487/2013 (IV Atp. CLP) of the European Parliament
9. Regulation (EU) 944/2013 (V Atp. CLP) of the European Parliament
10. Regulation (EU) 605/2014 (VI Atp. CLP) of the European Parliament
11. Regulation (EU) 1221/2015 (VII Atp. CLP) of the European Parliament
12. Regulation (EU) 918/2016 (VIII Atp. CLP) of the European Parliament
13. Regulation (EU) 1179/2016 (IX Atp. CLP) of the European Parliament
14. Regulation (EU) 776/2017 (X Atp. CLP) of the European Parliament
- The Merck Index. - 10th Edition
- Handling Chemical Safety
- INRS - Fiche Toxicologique (toxicological sheet)
- Patty - Industrial Hygiene and Toxicology
- N.I. Sax - Dangerous properties of Industrial Materials-7, 1989 Edition
- Website ECHA agency

Note for users:

The information contained in the present sheet are based on our own knowledge on the date of the last version. Users must verify the suitability and thoroughness of provided information according to each specific use of the product.

This document must not be regarded as a guarantee on any specific product property.

The use of this product is not subject to our direct control; therefore, users must, under their own responsibility, comply with the current health and safety laws and regulations. The producer is relieved from any liability arising from improper uses.

Provide appointed staff with adequate training on how to use chemical products.