

Rainbow® Plant Food 5-5-25

Section 1. Identification

GHS product identifier : Rainbow® Plant Food 5-5-25
Other means of identification : Product code(s): 1314-25788; 1315-25788; 1573-25788
 Historic MSDS #: 16019a
Product type : Granular solid.

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

Identified uses	
Fertilizer.	
Uses advised against	Reason
Not applicable.	Non-hazardous product.

Supplier's details : Agrium
 13131 Lake Fraser Drive, S.E.
 Calgary, Alberta, Canada, T2J 7E8

 Agrium U.S. Inc.
 5296 Harvest Lake Drive
 Loveland, CO 80538

 Company phone number (North America):
 1-800-403-2861 (Customer Service)

Emergency telephone number (with hours of operation) : Agrium North American 24 Hr Emergency Telephone Numbers:
 English:
 Transportation Emergencies: 1-800-792-8311
 Medical Emergencies: 1-303-389-1653

 French or Spanish:
 Transportation or Medical Emergencies: 1-303-389-1654

Section 2. Hazards identification

OSHA/HCS status : While this material is not considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200), this SDS contains valuable information critical to the safe handling and proper use of the product. This SDS should be retained and available for employees and other users of this product.

Classification of the substance or mixture : Not classified. Non-hazardous product.

GHS label elements

Hazard pictograms : **Not Applicable.**
No Applicable.
Non applicable.

Signal word : No signal word.

Hazard statements : Not applicable.

Precautionary statements

General : Read label before use. Keep out of reach of children. If medical advice is needed, have product container or label at hand.

Prevention : Not applicable.

Response : Not applicable.

Storage : Not applicable.

Disposal : Not applicable.

Section 2. Hazards identification

Hazards not otherwise classified : Handling and/or processing of this material may generate a dust which can cause mechanical irritation of the eyes, skin, nose and throat.

Section 3. Composition/information on ingredients

Substance/mixture : Multi-constituent substance

CAS number/other identifiers

CAS number : Not available.

Ingredient name	%	CAS number
Potassium chloride	40	7447-40-7
Calcium sulfate, dihydrate	24	10101-41-4
Ammonium sulfate	10 - 19	7783-20-2
Potassium magnesium sulfate	9	14977-37-8
Ammonium dihydrogen orthophosphate	5 - 11	7722-76-1
Sodium chloride	1	7647-14-5

Any concentration shown as a range is to protect confidentiality or is due to batch variation.

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

Occupational exposure limits, if available, are listed in Section 8.

Section 4. First aid measures

Description of necessary first aid measures

- Eye contact** : No known significant effects or critical hazards. May cause irritation due to mechanical action. Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. If irritation persists, get medical attention.
- Inhalation** : Non-hazardous in case of inhalation. No known significant effects or critical hazards. Get medical attention if symptoms occur.
In a fire, hazardous decomposition products may be produced. If any ill effects are felt, proceed as follows. If breathing is difficult, remove to fresh air and keep at rest in a position comfortable for breathing. Loosen tight clothing such as a collar, tie, belt or waistband. In case of inhalation of decomposition products in a fire, symptoms may be delayed. For additional advice call the medical emergency number on this SDS or your poison center or doctor.
- Skin contact** : No known effect after skin contact. Rinse with water for a few minutes.
- Ingestion** : No known significant effects or critical hazards. Ingestion may cause gastrointestinal irritation and diarrhea. Wash out mouth with water. Never give anything by mouth to an unconscious person. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. For additional advice call the medical emergency number on this SDS or your poison center or doctor.

Most important symptoms/effects, acute and delayed

Potential acute health effects

- Eye contact** : May cause irritation due to mechanical action.
- Inhalation** : Exposure to airborne concentrations above statutory or recommended exposure limits may cause irritation of the nose, throat and lungs.
- Skin contact** : No known significant effects or critical hazards.
- Ingestion** : No known significant effects or critical hazards.

Over-exposure signs/symptoms

- Eye contact** : Adverse symptoms may include the following:
irritation
watering
redness
- Inhalation** : Adverse symptoms may include the following:
respiratory tract irritation
coughing

Section 4. First aid measures

- Skin contact** : No specific data.
Ingestion : No specific data.

Indication of immediate medical attention and special treatment needed, if necessary

- Notes to physician** : In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours. Contact Agrium's 24 Hr Medical Emergency telephone number for professional support: English: 1-303-389-1653; French or Spanish: 1-303-389-1654
- Specific treatments** : No specific treatment. Treat symptomatically.
- Protection of first-aiders** : No action shall be taken involving any personal risk or without suitable training. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.

See toxicological information (Section 11)

Section 5. Fire-fighting measures

Extinguishing media

- Suitable extinguishing media** : Use an extinguishing agent suitable for the surrounding fire.
- Unsuitable extinguishing media** : None known.

Specific hazards arising from the chemical : No specific fire or explosion hazard. The substance will not burn. Undergoes thermal decomposition at elevated temperatures to release toxic and flammable gases.

- Hazardous thermal decomposition products** : Decomposition products may include the following materials:
 nitrogen oxides
 sulfur oxides

Special protective actions for fire-fighters : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.

Special protective equipment for fire-fighters : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Remark : Contain and collect the water used to fight the fire for later treatment and disposal.

Section 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

For non-emergency personnel : No action shall be taken involving any personal risk or without suitable training. Keep unnecessary and unprotected personnel from entering. Avoid breathing dust. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.

For emergency responders : If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

Environmental precautions : Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Will dissolve and disperse in water. Reclaiming material may not be possible. If possible, recover spilled product and place in suitable containers for recycle, reuse, or disposal. Product will promote algae growth and may degrade water quality and taste. Notify downstream water users. Inform the relevant authorities if the product has caused adverse impacts (sewers, waterways, soil or air).

Methods and materials for containment and cleaning up

Small spill : Move containers from spill area. Avoid dust generation. Recycle, if possible.
 or
 Place spilled material in a designated, labeled waste container. Dispose of via a licensed waste disposal contractor.

Section 6. Accidental release measures

- Large spill** : Move containers from spill area. Prevent entry into sewers, water courses, basements or confined areas. Avoid dust generation. Avoid creating dusty conditions and prevent wind dispersal. Recycle to process, if possible.
or
Place spilled material in an appropriate container for disposal. Dispose of via a licensed waste disposal contractor. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

Section 7. Handling and storage

Precautions for safe handling

- Protective measures** : Put on appropriate personal protective equipment (see Section 8). Do not ingest. Avoid contact with eyes, skin and clothing. Avoid breathing dust.
- Advice on general occupational hygiene** : Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

- Conditions for safe storage, including any incompatibilities** : Store in accordance with local regulations. May form steep piles that can collapse without warning when stored in bulk. Avoid forming steep slopes when removing product. Ensure that bulk bags or smaller packaged products stored in tiers are stacked, racked, blocked, interlocked, or otherwise secured to prevent sliding, rolling, or collapse. Use caution when opening truck or railcar doors as product may have shifted during transport.

Must be stored in a dry location. Absorbs moisture on long-term storage under high humidity conditions. Store away from incompatible materials (see Section 10). When product is stored in sealable containers, keep container tightly closed and sealed until ready for use. Sealable containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.

Section 8. Exposure controls/personal protection

Control parameters

Occupational exposure limits

Ingredient name	Exposure limits
Potassium chloride	OSHA (United States): Particulates not otherwise regulated (PNOR) TWA (8 hours), Total dust: 15 mg/m ³ ; Respirable fraction: 5 mg/m ³ .
Ammonium dihydrogen orthophosphate	OSHA (United States): Particulates not otherwise regulated (PNOR) TWA (8 hours), Total dust: 15 mg/m ³ ; Respirable fraction: 5 mg/m ³ .
Ammonium sulfate	OSHA (United States): Particulates not otherwise regulated (PNOR) TWA (8 hours), Total dust: 15 mg/m ³ ; Respirable fraction: 5 mg/m ³ .
Potassium magnesium sulfate	OSHA (United States): Particulates not otherwise regulated (PNOR) TWA (8 hours), Total dust: 15 mg/m ³ ; Respirable fraction: 5 mg/m ³ .
Calcium sulfate, dihydrate	ACGIH TLV (United States, 4/2014). TWA: 10 mg/m ³ 8 hours. Form: Inhalable fraction
Sodium chloride	OSHA (United States): Particulates not otherwise regulated (PNOR) TWA (8 hours), Total dust: 15 mg/m ³ ; Respirable fraction: 5 mg/m ³ .

Section 8. Exposure controls/personal protection

- Appropriate engineering controls** : Use only with adequate ventilation. If user operations generate dust, fumes, gas, vapor or mist, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits.
- Environmental exposure controls** : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.
- Individual protection measures**
- Hygiene measures** : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Wash contaminated clothing before reusing.
- Eye/face protection** : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: safety glasses with side-shields. If operating conditions cause high dust concentrations to be produced, use dust goggles.
- Skin protection**
- Hand protection** : The personal protective equipment required varies, depending upon your risk assessment. No special protection is required. For prolonged or repeated handling, use the following type of gloves: leather work gloves
- Body protection** : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product. Cotton or cotton/synthetic overalls or coveralls are normally suitable.
- Other skin protection** : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product. No special measures are typically indicated.
- Respiratory protection** : A respirator is not needed under normal and intended conditions of product use. Use a properly fitted, particulate filter respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator. Contact your personal protective equipment manufacturer to verify the compatibility of the equipment for the intended purpose. For U.S. work sites where respiratory protection is required, ensure that a respiratory protection program meeting 29 CFR 1910.134 requirements is in place.

Section 9. Physical and chemical properties

Appearance

- Physical state** : Granular solid.
- Color** : Gray.
- Odor** : Odorless.
- Odor threshold** : Not applicable.
- pH** : 6 [Conc. (% w/w): 10%]
- Melting point** : Not available.
- Boiling point** : Decomposes.
- Flash point** : [Product does not sustain combustion.]
- Evaporation rate** : Not applicable.
- Flammability (solid, gas)** : Not applicable. The substance will not burn. Undergoes thermal decomposition at elevated temperatures to release toxic and flammable gases.
- Lower and upper explosive (flammable) limits** : Not applicable.
- Vapor pressure** : Not applicable.
- Vapor density** : Not applicable.
- Relative density** : Not available.
- Solubility** : Easily soluble in the following materials: hot water.
Soluble in the following materials: cold water.
- Solubility in water** : Water soluble.

Section 9. Physical and chemical properties

Partition coefficient: n-octanol/water	: Not available.
Auto-ignition temperature	: Not applicable.
Decomposition temperature	: Not available.
Viscosity	: Not applicable.

Section 10. Stability and reactivity

Reactivity	: No specific test data related to reactivity available for this product or its ingredients.
Chemical stability	: The product is stable.
Possibility of hazardous reactions	: Under normal conditions of storage and use, hazardous reactions will not occur.
Conditions to avoid	: Absorbs moisture on long-term storage under high humidity conditions. Store in a well-ventilated, dry place. Protect from moisture.
Incompatible materials	: Incompatible with halogens. Incompatible with oxidizers
Hazardous decomposition products	: Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Section 11. Toxicological information

Information on toxicological effects

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
Potassium chloride	LD50 Oral	Rat	2600 mg/kg	-
Calcium sulfate, dihydrate	LC50 Inhalation Dusts and mists	Rat - Male, Female	>3.26 mg/l CaSO4.2H2O	4 hours
Ammonium sulfate	LD50 Oral	Rat - Male, Female	>1581 mg/kg	-
	LD50 Oral	Mouse - Male, Female	3040 mg/kg	-
	LD50 Oral	Rat	2840 mg/kg	-
	LD50 Oral	Rat - Male, Female	>2000 mg/kg	-
Potassium magnesium sulfate	LD50 Oral	Rat	3 g/kg	-
Ammonium dihydrogen orthophosphate	LD50 Oral	Rat - Male, Female	>2000 mg/kg	-
Sodium chloride	LD50 Oral	Rat	3000 mg/kg	-
	LDLo Intraperitoneal	Rat	3720 mg/kg	-

Conclusion/Summary : Very low toxicity to humans or animals. No known significant effects or critical hazards.

Irritation/Corrosion

Product/ingredient name	Result	Species	Score	Exposure	Observation
Potassium chloride	Eyes	Rabbit	0	24 hours 500 milligrams	-
Ammonium sulfate	Skin	Rabbit	0	20 hours	24 hours
	Eyes	Rabbit	0	-	72 hours
Sodium chloride	Eyes	Rabbit	0	-	-

Conclusion/Summary

Skin : No known significant effects or critical hazards.

Eyes : No known significant effects or critical hazards.

Respiratory : No known significant effects or critical hazards.

Sensitization

Section 11. Toxicological information

Product/ingredient name	Route of exposure	Species	Result
Ammonium sulfate	skin	Guinea pig	Not sensitizing

Conclusion/Summary

- Skin** : Non-sensitizer.
Respiratory : No known significant effects or critical hazards.

Mutagenicity

Product/ingredient name	Test	Experiment	Result
Potassium chloride	-	Experiment: In vivo Subject: Mammalian-Animal Cell: Somatic	Negative
Ammonium sulfate	OECD 476	Experiment: In vitro Subject: Mammalian-Animal Cell: Somatic	Negative
	OECD 473	Experiment: In vitro Subject: Mammalian-Animal Cell: Germ	Negative

- Conclusion/Summary** : No known significant effects or critical hazards.

Carcinogenicity

Product/ingredient name	Result	Species	Dose	Exposure
Potassium chloride	Negative - Oral - TDLo	Rat - Male	1820 mg/kg	-
Ammonium sulfate	Negative - Oral - TCLo	Rat - Male, Female	1288 mg/kg	2 years; 7 days per week
Sodium chloride	Negative - Oral - TDLo	Rat - Male	-	-

- Conclusion/Summary** : No known significant effects or critical hazards.

Classification

Product/ingredient name	OSHA	IARC	NTP
Ammonium sulfate	None.	-	-

Reproductive toxicity

Product/ingredient name	Maternal toxicity	Fertility	Development toxin	Species	Dose	Exposure
Ammonium sulfate	Negative	Negative	-	Mouse - Male, Female	Oral: 5000 mg/ kg	-

- Conclusion/Summary** : No known significant effects or critical hazards.

Teratogenicity

Product/ingredient name	Result	Species	Dose	Exposure
Ammonium sulfate	Negative - Oral	Rat - Male, Female	1500 mg/kg	-

- Conclusion/Summary** : No known significant effects or critical hazards.

Specific target organ toxicity (single exposure)

Not available.

Specific target organ toxicity (repeated exposure)

Not available.

Aspiration hazard

Not available.

Information on the likely routes of exposure : Routes of entry anticipated: Inhalation.

Potential acute health effects

Eye contact : May cause irritation due to mechanical action.

Section 11. Toxicological information

- Inhalation** : Exposure to airborne concentrations above statutory or recommended exposure limits may cause irritation of the nose, throat and lungs.
- Skin contact** : No known significant effects or critical hazards.
- Ingestion** : No known significant effects or critical hazards.

Symptoms related to the physical, chemical and toxicological characteristics

- Eye contact** : Adverse symptoms may include the following:
irritation
watering
redness
- Inhalation** : Adverse symptoms may include the following:
respiratory tract irritation
coughing
- Skin contact** : No specific data.
- Ingestion** : No specific data.

Delayed and immediate effects and also chronic effects from short and long term exposure

Short term exposure

- Potential immediate effects** : Not available.
- Potential delayed effects** : Not available.

Long term exposure

- Potential immediate effects** : Not available.
- Potential delayed effects** : Not available.

Potential chronic health effects

Product/ingredient name	Result	Species	Dose	Exposure
Potassium chloride	Chronic NOAEL Oral	Rat - Male	1820 mg/kg	-
Ammonium sulfate	Chronic NOAEL Oral	Rat - Male, Female	256 mg/kg	52 weeks; 7 days per week
Sodium chloride	Chronic LOEL Oral	Rat - Male	2533 mg/kg	2 years

- Conclusion/Summary** : No known significant effects or critical hazards.
- General** : No known significant effects or critical hazards.
- Carcinogenicity** : No known significant effects or critical hazards.
- Mutagenicity** : No known significant effects or critical hazards.
- Teratogenicity** : No known significant effects or critical hazards.
- Developmental effects** : No known significant effects or critical hazards.
- Fertility effects** : No known significant effects or critical hazards.

Numerical measures of toxicity

Acute toxicity estimates

Route	ATE value
Oral Inhalation (dusts and mists)	1393.9 mg/kg 6.25 mg/l

Section 12. Ecological information

Toxicity

Section 12. Ecological information

Product/ingredient name	Result	Species	Exposure
Potassium chloride	Acute EC50 1337000 µg/l Fresh water	Algae - Navicula seminulum	96 hours
	Acute EC50 9.24 g/L Fresh water	Algae - Desmodesmus subspicatus	72 hours
Ammonium sulfate	Acute EC50 83000 µg/l Fresh water	Daphnia - Daphnia magna	48 hours
	Acute LC50 9.68 mg/l Fresh water	Crustaceans - Pseudosida ramosa - Neonate	48 hours
Sodium chloride	Acute LC50 435000 µg/l Fresh water	Fish - Gambusia affinis - Adult	96 hours
	Acute LC50 2.6 mg/l Fresh water	Crustaceans - Ceriodaphnia dubia - Young	48 hours
Sodium chloride	Acute LC50 53 mg/l	Fish - Oncorhynchus mykiss	96 hours
	Chronic NOEC 143 µg/l Marine water	Fish - Salmo salar - Post-smolt	5 weeks
	Acute EC50 2430000 µg/l Fresh water	Algae - Navicula seminulum	96 hours
	Acute EC50 28.85 mg/dm ³ Fresh water	Algae - Pseudokirchneriella subcapitata	72 hours
	Acute EC50 519.6 mg/l Fresh water	Crustaceans - Cypris subglobosa	48 hours
	Acute IC50 6.87 g/L Fresh water	Aquatic plants - Lemna minor	96 hours
	Acute LC50 1661 mg/l Fresh water	Daphnia - Daphnia magna	48 hours
	Acute LC50 1000000 µg/l Fresh water	Fish - Morone saxatilis - Larvae	96 hours
	Chronic LC10 781 mg/l Fresh water	Crustaceans - Hyalella azteca - Juvenile (Fledgling, Hatchling, Weanling)	3 weeks
	Chronic NOEC 6 g/L Fresh water	Aquatic plants - Lemna minor	96 hours
	Chronic NOEC 0.314 g/L Fresh water	Daphnia - Daphnia pulex	21 days
	Chronic NOEC 100 mg/l Fresh water	Fish - Gambusia holbrooki - Adult	8 weeks

Conclusion/Summary : Practically non-toxic to aquatic organisms.

Persistence and degradability

Not available.

Bioaccumulative potential

Not available.

Mobility in soil

Soil/water partition coefficient (K_{oc}) : Not available.

Mobility : Not available.

Other adverse effects : No known significant effects or critical hazards.

Section 13. Disposal considerations

Disposal methods : The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste packaging should be recycled. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

Section 14. Transport information

	DOT Classification	TDG Classification	Mexico Classification	ADR/RID	IMDG	IATA
UN number	Not regulated.	Not regulated.	Not regulated.	Not regulated.	Not regulated.	Not regulated.
UN proper shipping name	-	-	-	-	-	-

Section 14. Transport information

Transport hazard class(es)	-	-	-	-	-	-
Packing group	-	-	-	-	-	-
Environmental hazards	No.	No.	No.	No.	No.	No.
Additional information	-	-	-	-	-	-

Special precautions for user : **Transport within user's premises:** always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

Section 15. Regulatory information

U.S. Federal Regulations: : **TSCA 8(a) CDR Exempt/Partial exemption:** Not determined
TSCA 8(b) inventory: All components are listed or exempted.

Clean Air Act Section 112 (b) Hazardous Air Pollutants (HAPs) : Not listed

Clean Air Act Section 602 Class I Substances : Not listed

Clean Air Act Section 602 Class II Substances : Not listed

DEA List I Chemicals (Precursor Chemicals) : Not listed

DEA List II Chemicals (Essential Chemicals) : Not listed

SARA 304 RQ : Not applicable.

SARA 311/312

Classification : Not applicable.

SARA 313

	Product name	CAS number	%
Form R - Reporting requirements	Ammonium sulfate	7783-20-2	10.038 - 19.335
	Ammonium dihydrogen orthophosphate	7722-76-1	4.15 - 9.35
Supplier notification	Ammonium sulfate	7783-20-2	10.038 - 19.335
	Ammonium dihydrogen orthophosphate	7722-76-1	4.15 - 9.35

SARA 313 notifications must not be detached from the SDS and any copying and redistribution of the SDS shall include copying and redistribution of the notice attached to copies of the SDS subsequently redistributed.

State regulations

Massachusetts : The following components are listed: Ammonium sulfate

New York : None of the components are listed.

New Jersey : None of the components are listed.

Pennsylvania : The following components are listed: Sulfuric acid diammonium salt

California Prop. 65

Not listed.

International regulations

International lists

National inventory

Canada : All components are listed or exempted.

Europe : Not determined.

Section 16. Other information

History

Date of issue/Date of revision : 7/1/2017

Date of previous issue : 6/1/2017

Version : 1.3

Key to abbreviations :

- ATE = Acute Toxicity Estimate
- BCF = Bioconcentration Factor
- GHS = Globally Harmonized System of Classification and Labelling of Chemicals
- IATA = International Air Transport Association
- IBC = Intermediate Bulk Container
- IMDG = International Maritime Dangerous Goods
- LogPow = logarithm of the octanol/water partition coefficient
- MARPOL = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)
- UN = United Nations

References

: Transportation of Dangerous Goods Act and Clear Language Regulations, current edition at time of (M)SDS preparation, Transport Canada;
 Hazardous Products Act and Regulations, current revision at time of (M)SDS preparation, Health Canada;
 Domestic Substances List, current revision at time of (M)SDS preparation, Environment Canada;
 29 CFR Part 1910, current revision at time of SDS preparation, U.S. Occupational Safety and Health Administration;
 40 CFR Parts 1-799, current revision at time of SDS preparation, U.S. Environmental Protection Agency;
 49 CFR Parts 1-199, current revision at time of SDS preparation, U.S. Department of Transport;
 Threshold Limit Values for Chemical Substances, current edition at time of SDS preparation, American Conference of Governmental Industrial Hygienists;
 NFPA 400, National Fire Codes, National Fire Protection Association, current edition at time of SDS preparation;
 NFPA 704, National Fire Codes, National Fire Protection Association, current edition at time of SDS preparation;
 Corrosion Data Survey, Sixth Edition, 1985, National Association of Corrosion Engineers;
 ERG 2016, Emergency Response Guidebook, U.S. Department of Transport, Transport Canada, and the Secretariat of Transportation and Communications of Mexico
 Hazardous Substances Data Bank, current revision at time of SDS preparation, National Library of Medicine, Bethesda, Maryland
 Integrated Risk Information System, current revision at time of SDS preparation, U.S. Environmental Protection Agency, Washington, D.C.
 Pocket Guide to Chemical Hazards, current revision at time of SDS preparation, National Institute for Occupational Safety and Health, Cincinnati, Ohio ;
 Agency for Toxic Substances and Disease Registry Databank, current revision at time of SDS preparation, U.S. Department of Health and Human Services, Atlanta, Georgia
 National Toxicology Program, Report on Carcinogens, Division of the National Institute of Environmental Health Sciences, Research Triangle Park, North Carolina.
 Registry of Toxic Effects of Chemical Substances. National Institute for Occupational Safety and Health, Cincinnati, Ohio

📌 Indicates information that has changed from previously issued version.

Notice to reader

The information and recommendations contained in this Safety Data Sheet ("SDS") relate only to the specific material referred to herein (the "Material") and do not relate to the use of such Material in combination with any other material or process. The information and recommendations contained herein are believed to be current and correct as of the date of this SDS. **HOWEVER, THE INFORMATION AND RECOMMENDATIONS ARE PRESENTED WITHOUT WARRANTY, REPRESENTATION OR LICENSE OF ANY KIND, EXPRESS OR IMPLIED, WITH RESPECT TO THEIR ACCURACY, CORRECTNESS OR COMPLETENESS, AND THE SELLER, SUPPLIER AND MANUFACTURER OF THE MATERIAL AND THEIR RESPECTIVE AFFILIATES (COLLECTIVELY, THE "SUPPLIER") DISCLAIM ALL LIABILITY FOR RELIANCE ON SUCH INFORMATION AND RECOMMENDATIONS.** This SDS is not a guarantee of safety. A buyer or user of the Material (a "Recipient") is responsible for ensuring that it has all current information necessary to safely use the Material for its specific purpose. **FURTHERMORE, THE RECIPIENT ASSUMES ALL RISK IN CONNECTION WITH THE USE OF THE MATERIAL. THE RECIPIENT ASSUMES ALL RESPONSIBILITY FOR ENSURING THE MATERIAL IS USED IN A SAFE MANNER IN COMPLIANCE WITH APPLICABLE ENVIRONMENTAL, HEALTH, SAFETY AND SECURITY LAWS,**

Section 16. Other information

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