

**MATERIAL SAFETY DATA SHEET**  
**HD AR-SFFF-F3 3x3%**  
**ALCOHOL RESISTANT-SYNTHETIC FLUORINE FREE FOAM**



**SECTION 1 – Identification of the substance/mixture and of the company/undertaking**

**1.1 Product Identifier**

Product Form Mixture  
 Product Name **HD AR-SFFF-F3 3x3%**  
 Type of Product Fire Extinguishing Alcohol Resistant-Synthetic Fluorine Free Foam

**1.2 Relevant identified uses of the substance of mixture and uses advised against**

1.2.1 Relevant identified uses.

Industrial/Professional use specification Industrial, For professional use - fire extinguishing application only  
 Use of the substance/mixture Firefighting Foam Concentrate

1.2.2 Uses advised against.

No additional information available

**1.3 Details of the supplier of the safety data sheet**

Company Name	Address	Contacts
HD Fire Protect Pvt. Ltd.	D-6/2, Road No. 34, Wagle Estate, Thane 400604, India	Phone: +91-22-21582600 Fax: +91-22-21582602 Email: info@hdfire.com Website: <a href="http://www.hdfire.com">www.hdfire.com</a>

**1.4 Emergency telephone number**

Emergency number Mobile: +91-22-21582600

**SECTION 2 – Hazards identification**

**2.1 Classification of the substance or mixture**

Classification according to Regulation (EC) No. 1272/2008 (CLP) Acute toxicity 4 (oral), Skin corrosion 2, Eye Damage 1.

Full text of H statements: see section 16

Adverse physiochemical, human health and environmental effects No additional information available

**2.2 Label elements**

Labelling according to Regulation (EC) No. 1272/2008 (CLP)

Hazard pictograms (CLP)



GH507

Signal work (CLP)

: **Warning**

Hazard statements (CLP)

: H302 - Harmful if Swallowed,  
 H315 - Causes skin irritation,  
 H319 - Causes serious eye irritation

Precautionary statements (CLP)

: P264 - Wash hands thoroughly after handling.  
 : P280 - Wear eye protection, protective clothing, protective gloves  
 : P302+P352 - If on skin: Wash with plenty of water.  
 : 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 occurs: Get medical advice/attention.  
 P362+P364 - Take off contaminated clothing and wash it before reuse.

**2.3 Other hazards**

PBT & vPvB: not relevant – no registration required.

**SECTION 3 – Composition/information on ingredients**

**3.1. Substances**

Not applicable

**3.2. Mixtures**

Name	Product identifier	%	Classification as per Regulation (EC) No. 1272/2008 [CLP]
Sulfuric acid, mono-octyl-decyl-alkyl esters, sodium salts	(CAS-No.) 85338-42-7	12-18	Acute toxicity 5 (oral), Skin corrosion 2, Eye Damage 1.
D-Glucopyranose, oligomers, decyl octyl glycosides	(CAS-No.) 68515-73-1 (EC-No.) 500-220-1	3-6	Eye Damage 1, H318
Cocamidopropylamine Oxide	(CAS-No.) 68155-09-9 (EC-No.) 268-938-5	3-6	Acute toxicity 4 (oral) H 302 Acute aquatic toxicity 2 H 401

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Name	Product identifier	%	Classification as per Regulation (EC) No. 1272/2008 [CLP]
2-Butoxyethanol	(CAS-No.) 111-76-2 (EC-No.) 203-905-0	2-8	Harmful by inhalation, in contact with skin & if swallowed. Irritating to eyes & skin.

Full text of H-statements: See section 16

**SECTION 4 – First aid measures**

**4.1 Description of first aid measures**

First-aid measures General	Remove patient from hazard area, keep patient calm & warm. Provide fresh air. Refer this Material Safety Data Sheet while giving medical treatment.
First-aid measures Inhalation	If patient is conscious, it is anticipated to be a minor problem. If there is breathing difficulty or cough, keep patient at rest, seated in maximum comfortable position. Call for medical attention if symptoms do not go away quickly or patient is unconscious.
First-aid measures Skin contact	Remove contaminated clothing. Wash immediately with plenty of clean water. If irritation persists, call for medical treatment.
First-aid measures Eye contact	Wash immediately with clean flowing water for at least 10 minutes, contact doctor if irritation/pain persists.
First-aid measures Ingestion	May cause nausea. Do not induce vomiting. Send immediately for medical attention

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

Symptoms/effects	Causes damage to organs (kidneys) (if swallowed).
Symptoms/effects after eye contact	Causes serious eye irritation.

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

Treat symptomatically.

**SECTION 5 – Firefighting measures**

**5.1. Extinguishing media**

Suitable extinguishing media	No specific measures necessary. This product is a fire extinguishing agent.
Unsuitable extinguishing media	Not applicable

**5.2. Special hazards arising from the substance or mixture**

Fire hazard	No fire hazard.
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**5.3. Advice for firefighters**

Firefighting instructions	Not applicable.
Protection during firefighting	Not applicable.

**SECTION 6 – Accidental release measures**

**6.1. Personal precautions, protective equipment and emergency procedures**

6.1.1 For non-emergency personnel	
Emergency procedures	Evacuate unnecessary personnel.
6.1.2 For emergency responders	
Protective equipment	Do not attempt to take action without suitable protective equipment. For further information refer to section 8: "Exposure controls/personal protection".

**6.2. Environmental precautions**

Prevent entry to sewers and public waters. Notify authorities if product enters sewers or public waters.

**6.3. Methods and material for containment and cleaning up**

Methods for cleaning up	Soak up spills with inert solids, such as clay or diatomaceous earth as soon as possible. Collect spillage. Store away from other materials.
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**6.4. Reference to other sections**

Section:- 8. Exposure controls/personal protection. Section:-13. Disposal considerations.

**SECTION 7 – Handling and storage**

**7.1 Precautions for safe handling**

Precaution for safe handling	Avoid contact with skin and eyes. Wear recommended personal protective equipment. Read and follow manufacturer's recommendations. Handle in accordance with good industrial hygiene and safety procedures. Read and follow the Safety Data Sheet (SDS) before use.
Hygiene measures	Wash hands thoroughly after handling.

**7.2 Conditions for safe storage, including any incompatibilities**

Storage conditions	Store the product in original shipping container or tanks designed for product storage, away from direct sunlight and heat. Protect from freezing. Store at temperatures not exceeding 60°C (140°F) (intermittent). Do not put into contact with material which reacts violently with water. Keep/Store away from incompatible materials.
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**7.3 Specific end use(s)**

Firefighting foam concentrate.

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**SECTION 8 – Exposure controls/personal protection**

**8.1 Control parameters**

<b>Sulfuric acid, mono-octyl-decyl-alkyl esters, sodium salts (85338-42-7)</b>	Occupational Exposure Limits: None.	
<b>D-Glucopyranose, oligomers, decyl octyl glycosides (68515-73-1)</b>	Worker: Long term exposure, dermal: 595000 mg/kg, Inhalation: 420 mg/m <sup>3</sup> Consumer: Long term exposure, dermal:357000 mg/kg, Inhalation: 124 mg/m <sup>3</sup> , Oral: 35.7 mg/kg	
<b>Cocamidopropylamine Oxide (68155-09-9)</b>	Occupational Exposure Limits: None.	
<b>2-Butoxyethanol (111-76-2)</b>	ACGIH TWA (ppm)	20 ppm (BEI)
	EU IOELV (TWA) (mg/m <sup>3</sup> )	98 mg/m <sup>3</sup>
	EU IOELV (STEL) (mg/m <sup>3</sup> )	246 mg/m <sup>3</sup>

**8.2 Exposure controls**

Appropriate engineering controls	Ensure adequate ventilation. Follow the exposure limits given on this material safety data sheet.
Personal protective equipment	Body covering clothing recommended.
Eye protection	Wear sealed/tight fitting safety goggles of an approved type (eg: EN 166). 
Hand protection	Wear impervious gloves of approved type (eg: Neoprene, Butyl Rubber, PVA, viton) 
Skin and body protection:	Wear recommended personal protective equipment. 
Respiratory protection	In case of insufficient ventilation, wear suitable respiratory equipment (recommended filter type A2/P2). 
Thermal hazard protection	Wear thermal protective clothing, when necessary.
Environmental exposure controls	Contain spills. Prevent releases. Observe national regulations on emissions. Ensure all national/local regulations are observed.
Other information	Do not eat, drink, or smoke when using this product.

**SECTION 9 – Physical and chemical properties**

**9.1. Information on basic physical and chemical properties**

Appearance/Physical state	Light Yellow Viscous liquid
Odour	Characteristic
Odour threshold	No data available
pH	8.0 ± 1.0
Melting point / freezing point	Does not apply / -2°C
Initial boiling point & boiling range	100° C at 760 mm Hg
Flash point	> 100°C
Relative evaporation rate	No data available
Flammability (solid, gas)	Does not apply
Upper/lower flammability/explosive limit	Does not apply
Vapour pressure	Does not apply
Vapour density	Does not apply
Relative density	Does not apply
Specific Gravity	1.02 ± 0.02
Solubility(ies)	Soluble in Water
Partition coefficient: n-octanol/water	Does not apply
Auto-ignition temperature	Does not apply
Decomposition temperature	Does not apply
Viscosity, kinematic	1400 ± 300 cPs
Explosive properties	Does not apply
Oxidising properties	Does not apply

**9.2. Other information**

No additional information available

**SECTION 10 – Stability and reactivity**

**10.1. Reactivity**

The product is stable and non reactive under normal conditions of use, storage and transport.

**10.2. Chemical stability**

Stable under normal conditions.

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**10.3. Possibility of hazardous reactions**

No dangerous reactions known under normal conditions of use.

**10.4. Conditions to avoid**

Incompatible materials. Extremely high or low temperatures. Direct Sunlight.

**10.5. Incompatible materials**

Alkali metals. Oxidizing agent. Water reactive substances.

**10.6. Hazardous decomposition products**

Carbon oxides. Sulphur oxides. Hydrogen fluoride. Nitrogen oxides (NOx). Sodium oxides.

**SECTION 11: Toxicological information**

**11.1. Information on toxicological effects**

Acute toxicity	Not classified
<b>Sulfuric acid, mono-octyl-decyl-alkyl esters, sodium salts (85338-42-7)</b>	
LD50 oral Male rat	>2000 mg/kg.
LD50 dermal Male rat	1200 mg/kg
Irritation/corrosion	Skin:- Species: rabbit, Result: irritant. Eye:- Species: rabbit, Result: severe irritant.
Sensitization	Species: mouse, Route: Skin, Result: Non-sensitizing.
Mutagenicity	Experiment: In Vitro, Subject: Bacteria, Result: Negative, Method: OECD 471 Bacterial reverse mutation Experiment: In Vitro, Subject: Mammalian-Animal, Result: Negative, Method: OECD 473 Mammalian Cell Experiment: In Vivo, Subject: Mammalian-Animal, Result: Negative, Method: OECD 478 Genetic Toxicology,
Carcinogenicity	Subject: Male, Female Rat, Result: Negative - Oral TClO, Dose: 1125 mg/kg., Exposure: 2 years (7 days
Teratogenicity	Subject: Rat, Result: Negative - Oral, Dose: 500 mg/kg., Exposure: 10 days (7 days per week)
Potential chronic health effects	Species: Male, Female Rat, Result: Sub-chronic NOAEL Oral, Dose: 488 mg/kg. Exposure 13 weeks (7 Species: Male, Female Rat, Result: Sub-chronic NOAEL Dermal, Dose: 400 mg/kg. Exposure 13 weeks (2

<b>D-Glucopyranose, oligomers, decyl octyl glycosides (68515-73-1)</b>	
LD50 oral rat	> 5.000 mg/kg, OECD Guideline 401
LD50 dermal rabbit	> 2.000 mg/kg, OECD Guideline 401
Irritation/corrosion	Skin:- Species: rabbit, Result: Slightly irritating, Method: OECD guideline 404 Eye:- Species: rabbit, Result: irreversible damage, Method: OECD guideline 405
Sensitization	Species: guinea pig, Result: Non-sensitizing, Method: OECD guideline 406
Genetic Toxicity	Exp./calculated data: OECD guideline 471 Ames-test Salmonella typhimurium: negative
Aspiration Hazard	No aspiration hazard expected

<b>Cocamidopropylamine Oxide (68155-09-9)</b>	
Acute oral toxicity (Rat)	LD50: ≥ 500 - ≤ 1000 mg/kg bw (active ingredient) (OECD Guideline 423)
Acute dermal toxicity (Rat)	LD50: > 2174 mg/kg bw (OECD Guideline 402 / EU Method B.3)
Acute inhalation toxicity	No data available
Irritation/corrosion	Skin:- Species: rabbit, Result: irritant (OECD Guideline 404 / EU Method B.4) Eye:- Species: rabbit, Result: severe irritant (OECD Guideline 405)
Respiratory or skin sensitization (Guinea pig)	Species: Guinea pig, Route: Skin, Result: Non-sensitizing (OECD Guideline 406 / EU Method B.6)
Germ cell mutagenicity	In vitro mammalian chromosome aberration test: Negative (OECD Guideline 473 / EU Method B.10) Bacterial reverse mutation assay (in-vitro): Negative (OECD Guideline 471; EU Method B.13/14) Mammalian cell gene mutation assay (in-vitro): Negative (OECD Guideline 476 / EU Method B.17)
Carcinogenicity	No data available
STOT-single exposure & repeated exposure	Not Classified

<b>2-Butoxyethanol (111-76-2)</b>	
LD50 oral rat	1300 mg/kg
LD50 guinea pig	1400 mg/kg
LD50 dermal guinea pig	2000 mg/kg
LD50 guinea pig (vapours)	>3.1 mg/l/1h

Skin corrosion/irritation	Not classified (pH 8.0 ± 1.0)
Serious eye damage/irritation	Causes eye irritation (pH 8.0 ± 1.0)
Respiratory or skin sensitisation	Not classified
Germ cell mutagenicity	Not classified
Carcinogenicity	Not classified
Reproductive toxicity	Not classified
STOT-single exposure	Not classified
STOT-repeated exposure	Not classified
Aspiration hazard	Not classified

<b>HD- AR-SFFF-F3 3x3%</b> Viscosity,	
kinematic	1400 ± 300 cPs

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**SECTION 12: Ecological information**

**12.1. Toxicity**

Sulfuric acid, mono-octyl-decyl-alkyl esters, sodium salts (85338-42-7)	Parameter	Method	Value	Duration	Species
Acute Toxicity algae	EC10 fresh water		1.12 mg/l	72 h	Pseudokirchinella subcapitata
Acute Toxicity algae	EC50 fresh water		49.4 mg/l	72 h	Pseudokirchinella subcapitata
Chronic toxicity aquatic invertebrates	EC50 fresh water		>100 mg/l	48 h	Daphnia Magna
Micro-organisms	EC50 fresh water	OECD guideline 209	>135 mg/l	3 h	Micro-organism
Acute toxicity fishes	LC50 fresh water	Equivalent OECD 203	13 mg/l	48 h	Cyprinus carpio
Chronic toxicity invertebrates	EC50 fresh water	Equivalent OECD 202	1.4 mg/l	21 days	Daphnia Magna
Chronic NOEC Fish		Equivalent OECD 209	≥ 1.357 mg/l	42 days	Pimephales promelas

D-Glucopyranose, oligomers, decyl octyl glycosides (68515-73-1)	Parameter	Method	Value	Duration	Species
Acute toxicity fish	LC50	DIN EN ISO 7346-2	> 100 mg/l	96 h	Brachydanio rerio
Chronic toxicity fish	LC50	OECD guideline 204	>1-10 mg/l	96 h	Brachydanio rerio
Aquatic invertebrates	EC50	OECD guideline 202, part 1	> 100 mg/l	48 h	Daphnia Magna
Chronic toxicity aquatic invertebrates		OECD guideline 202, part 2	>1-10 mg/l		Daphnia Magna
Aquatic plants		Directive 88/302/EEC, part C, p.89	>10-100 mg/l		Scenedesmus subspicatus
Micro-organisms/Effect on activated sludge		OECD guideline 209	EC0>100 mg/l		Pseudomonas putida
Micro-organisms/Effect on activated sludge		DIN 38412 part 8	EC0>100 mg/l		Pseudomonas putida
Degradability/persistence/Biological/Abiological degradation	Readily biodegradable (according to OECD criteria)				

Cocamidopropylamine Oxide (68155-09-9)	Parameter	Method	Value	Duration	Species
Short-term toxicity to fish	LC50 fresh water		1.8 mg/l	96 h	Oncorhynchus mykiss
Long-term toxicity to fish	-	similar to EPA OPPTS 850.1500	NOEC:0.495 mg/l NOEC:0.42 mg/l	15D302D	Pimephales promelas
Short-term toxicity to aquatic invertebrates	EC50 fresh water	OECD Guideline 202	55.5 mg/l	48 h	Daphnia Magna
Long-term toxicity to aquatic invertebrates	-	OECD Guideline 211	NOEC:0.7 mg/l LC50:0.96 mg/l	21D	Daphnia Magna
Toxicity to aquatic algae	-	OECD Guideline 201	EC50:1.97 mg/l NOEC:0.85 mg/l	72H	Pseudokirchnerella subcapitata

**12.2. Persistence and degradability**

<b>HD AR-SFFF F3 3X3 FOAM</b>	
Persistence and degradability	No data available.
<b>Sulfuric acid, mono-octyl-decyl-alkyl esters, sodium salts (85338-42-7)</b>	99% (15 days) OECD 301D method, Ready Biodegradability Closed Bottle Test.
<b>D-Glucopyranose, oligomers, decyl octyl glycosides (68515-73-1)</b>	Readily biodegradable (according to OECD criteria)
<b>HD AR-SFFF F3 3X3 FOAM</b>	
Biochemical oxygen demand (BOD)	Data not available.
Biochemical oxygen demand (BOD)	Data not available.
Chemical oxygen demand (COD)	Data not available.
Biodegradability (BOD)/(COD)	Data not available.

**12.3. Bioaccumulative potential**

<b>HD AR-SFFF F3 3X3 FOAM</b>	
Bioaccumulative potential	The product is not expected to bioaccumulate.
<b>Sulfuric acid, mono-octyl-decyl-alkyl esters, sodium salts (85338-42-7)</b>	Log pow -2.31 to 1.72, Potential: Low.
<b>D-Glucopyranose, oligomers, decyl octyl glycosides (68515-73-1)</b>	Significant accumulation in organisms is not to be expected

**12.4. Mobility in soil**

<b>HD AR-SFFF F3 3X3 FOAM</b>	
Mobility in soil	No data available.
<b>D-Glucopyranose, oligomers, decyl octyl glycosides (68515-73-1)</b>	Adsorption to solid soil phase is not expected

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**12.5. Results of PBT and vPvB assessment**

<b>D-Glucopyranose, oligomers, decyl octyl glycosides (68515-73-1)</b>	According to Annex XIV of Regulation (EC) No.1907/2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH): The product does not contain a substance fulfilling the PBT (persistent/bioaccumulative/toxic) criteria or the vPvB (very persistent/very bioaccumulative) criteria. Self classification
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**12.6. Other adverse effects**

<b>Other adverse effects</b>	An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.
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**SECTION 13 – Disposal considerations**

**13.1. Waste treatment methods**

Product/Packaging disposal recommendations Dispose in a safe manner in accordance with relevant local/national regulations. Do not allow to enter into surface, water or drains. Do not re-use empty containers.

Ecology - waste materials Avoid release to the environment.

**SECTION 14 – Transport information**

In accordance with ADR / RID / IMDG / IATA / ADN

	ADR	IMDG	IATA	ADN	RID
<b>14.1. UN number</b>	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable
<b>14.2. UN proper shipping name</b>	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable
<b>14.3. Transport hazard class(es)</b>	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable
<b>14.4. Packing group</b>	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable
<b>14.5. Environmental hazards</b>	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable

No supplementary information available

**14.6. Special precautions for user**

Overland transport	Not applicable	Land transport (ADG): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS
Transport by sea	Not applicable	Sea transport (IMDG-Code / GGVSee): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS
Air transport	Not applicable	Air transport (ICAO-IATA / DGR): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS
Inland waterway transport	Not applicable	Marine Pollutant: NO
Rail transport	Not applicable	HAZCHEM: NOT APPLICABLE

**14.7. Transport in bulk according to Annex II of Marpol and the IBC Code**

Not applicable

**SECTION 15 – Regulatory information**

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

15.1.1. EU-Regulations

The following restrictions are applicable according to Annex XVII of the REACH Regulation (EC) No 1907/2006:

<b>D-Glucopyranose, oligomers, decyl octyl glycosides (68515-73-1)</b>	Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)
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Contains no substance on the REACH candidate list.

Contains no REACH Annex XIV substances.

15.1.2. National Regulations

AIR (Prevention & Control of pollution) Act, 1981.

Water (Prevention and Control of Pollution) Cess (Amendment) Act, 2003.

Hazardous and Other Wastes (Management& Transboundary Movement) Amendment Rules, 2019

**15.2. Chemical safety assessment**

No additional information available.

**SECTION 16 – Other information**

Revision Date	October 2022
Data Source	REGULATION (EC) No 1272/2008 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 16 December 2008 on classification, labelling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006.

**Full text of H- and EUH-statements:**

Acute Toxicity 4 (Inhalation:dust,mist)	Acute toxicity (inhalation:dust,mist) Category 4
Acute Toxicity 4 (Oral)	Acute toxicity (oral), Category 4
Acute Toxicity 3 (Inhalation:dust,mist)	Acute toxicity (inhalation:dust,mist) Category 3
Acute Toxicity 3 (Dermal)	Acute toxicity (Dermal), Category 3
Eye Damage 1	Serious eye damage/eye irritation, Category 1
Eye Irritation 2	Serious eye damage/eye irritation, Category 2
Flam. Liq. 2	Flammable liquids, Category 2
Skin Irrit. 2	Skin corrosion/irritation, Category 2

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STOT RE 2	Specific target organ toxicity Repeated exposure, Category 2
STOT SE 1	Toxic to humans from single exposure, Category 1
H225	Highly flammable liquid and vapour.
H302	Harmful if swallowed.
H311	Toxic in contact with skin.
H315	Causes skin irritation.
H318	Causes serious eye damage.
H319	Causes serious eye irritation.
H331	Toxic if inhaled.
H332	Harmful if inhaled
H370	May cause damage to organs.
H373	May cause damage to organs through prolonged or repeated exposure.
H400	Very toxic to aquatic life
H401	Toxic to aquatic life
H410	Very toxic to aquatic life with long-lasting effects
H412	Harmful to aquatic life with long-lasting effects

**Abbreviations and acronyms**

ACGIH = American Conference of Governmental Industrial Hygienists.  
ADN = European Provisions concerning the International Carriage of Dangerous Goods by Inland Waterway  
ADR = The European Agreement concerning the International Carriage of Dangerous Goods by Road  
ATE = Acute Toxicity Estimate  
CAS = Chemical Abstracts Service  
CLP = Classification, Labelling and Packaging Regulation [Regulation (EC) No. 1272/2008]  
EC = European Community / Effective Concentration.  
EINECS = European Inventory of Existing Commercial chemical Substances  
EUH statement = CLP-specific Hazard statement  
GHS = Globally Harmonized System of Classification and Labelling of Chemicals  
IATA = International Air Transport Association  
IBC = Intermediate Bulk Container  
IMDG = International Maritime Dangerous Goods  
LC = Lethal Concentration  
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)  
OECD = Organisation for Economic Co-operation and Development  
PBT = Persistent, Bioaccumulative and Toxic  
PEL = Permissible Exposure Limit  
REACH = Registration, Evaluation, Authorisation and Restriction of Chemicals.  
RID = The Regulations concerning the International Carriage of Dangerous Goods by Rail  
STEL = Short Term Exposure Limit  
STOT-SE = Specific Target Organ Toxicity - Single Exposure  
SVHC = Substances of Very High Concern  
TWA = Time weighted average  
UN = United Nations  
vPvB = Very Persistent and Very Bioaccumulative

**DISCLAIMER:**

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product. User is required to ensure suitability of the product for the intended use, compliance to regulations, for its safe use and disposal. HD FIRE PROTECTPVT. LTD will not be held responsible or liable for any injury or accident of any kind.