

Jotaroof

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

GHS product identifier	: Jotaroof
Product code	: 3746
Other means of identification	: Not available.
Product description	: Paint.
Product type	: Liquid.

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

Use in coatings - Consumer use: Apply this product only as specified on the label.

Manufacturing country	: Jotun (Cambodia) Limited Oval Office Tower – 18th floor, Street 360 (corner Norodom Boulevard), Sangkat Boeung Keng Kang I Khan Chamkarmon, Phnom Penh, Cambodia.
	Office: +855 78 755 755 SDSJotun@jotun.com
Emergency telephone number	: +47 33 45 70 00 Jotun Norway (head office)

Section 2. Hazards identification

Classification of the substance or mixture	SKIN SENSITISATION - Category 1A SHORT-TERM (ACUTE) AQUATIC HAZARD - Category 2 LONG-TERM (CHRONIC) AQUATIC HAZARD - Category 3
GHS label elements	
Hazard pictograms	
Signal word	Warning.
Hazard statements	H317 - May cause an allergic skin reaction. H401 - Toxic to aquatic life. H412 - Harmful to aquatic life with long lasting effects.
Precautionary statements	
General	P102 - Keep out of reach of children.
Prevention	P280 - Wear protective gloves. P273 - Avoid release to the environment. P261 - Avoid breathing vapour.
Response	P363 - Wash contaminated clothing before reuse. P302 + P352 - IF ON SKIN: Wash with plenty of water. P333 + P313 - If skin irritation or rash occurs: Get medical advice or attention.
Storage	Not applicable.
Date of issue/Date of revision	: 19.12.2023

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Section 2. Hazards identification

: P501 - Dispose of contents and container in accordance with all local, regional, national and international regulations.

Other hazards which do not : None known. result in classification

Section 3. Composition/information on ingredients

Substance/mixture	: Mixture
Other means of	: Not available.
identification	

Ingredient name	%	CAS number
diuron (encapsulated)	≤0.3	330-54-1
diuron (ISO); 3-(3,4-dichlorophenyl)-1,1-dimethylurea	≤0.028	330-54-1
zinc pyrithione	≤0.023	13463-41-7
2-octyl-2h-isothiazol-3-one (OIT)	≤0.011	26530-20-1
C(M)IT/MIT (3:1)	< 0.003	55965-84-9

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	: Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Get medical attention if irritation occurs.
Inhalation	: Remove victim to fresh air and keep at rest in a position comfortable for breathing. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention if adverse health effects persist or are severe. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.
Skin contact	: Wash with plenty of soap and water. Remove contaminated clothing and shoes. Wash contaminated clothing thoroughly with water before removing it, or wear gloves. Continue to rinse for at least 10 minutes. Get medical attention. In the event of any complaints or symptoms, avoid further exposure. Wash clothing before reuse. Clean shoes thoroughly before reuse.
Ingestion	: Wash out mouth with water. Remove dentures if any. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. 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. Get medical attention if adverse health effects persist or are severe. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.
Most important symptoms/	effects, acute and delayed

Potential acute health effects	
Eye contact	No known significant effects or critical hazards.
Inhalation	: No known significant effects or critical hazards.
Skin contact	May cause an allergic skin reaction.

: 19.12.2023

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Disposal

Section 4. First aid measures

Ingestion	: No known significant effects or critical hazards.
Over-exposure signs/symp	<u>ptoms</u>
Eye contact	: No specific data.
Inhalation	: No specific data.
Skin contact	: Adverse symptoms may include the following: irritation redness
Ingestion	: No specific data.
Indication of immediate me	dical attention and special treatment needed, if necessary
Notes to physician	 Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
Specific treatments	: No specific treatment.
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. Wash contaminated clothing thoroughly with water before removing it, or wear

See toxicological information (Section 11)

Section 5. Firefighting 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	: In a fire or if heated, a pressure increase will occur and the container may burst. This material is toxic to aquatic life. This material is harmful to aquatic life with long lasting effects. Fire water contaminated with this material must be contained and prevented from being discharged to any waterway, sewer or drain.
Hazardous thermal decomposition products	: Decomposition products may include the following materials: carbon dioxide carbon monoxide metal oxide/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.

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. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilt material. Avoid breathing vapour or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.
For emergency responders	If specialised 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".

Section 6. Accidental release measures

Environmental precautions	: Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air). Water polluting material. May be harmful to the environment if released in large quantities.
Methods and material for con	tainment and cleaning up
Small spill	: Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.
Large spill	: Stop leak if without risk. Move containers from spill area. Approach the release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see Section 13). Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilt product. 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** 2 Put on appropriate personal protective equipment (see Section 8). Persons with a history of skin sensitization problems should not be employed in any process in which this product is used. Do not get in eyes or on skin or clothing. Do not ingest. Avoid breathing vapour or mist. Avoid release to the environment. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container. Eating, drinking and smoking should be prohibited in areas where this material is Advice on general occupational hygiene 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, Store in accordance with local regulations. Store in original container protected 2 including any from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Keep container tightly closed and incompatibilities sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabelled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use. Section 8. Exposure controls/personal protection

Control parameters

Occupational exposure limits

Ingredient name	Exposure limits
diuron (ISO); 3-(3,4-dichlorophenyl)-1,1-dimethylurea	Ministry of Labor (Thailand, 8/2017). TWA: 10 mg/m ³ 8 hours.

Appropriate engineering controls	:	Good general ventilation should be sufficient to control worker exposure to airborne contaminants.
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.

Section 8. Exposure controls/personal protection

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Individual protection measure		
Hygiene measures	eating, smo Appropriate Contamina contaminat showers ar	ds, forearms and face thoroughly after handling chemical products, before oking and using the lavatory and at the end of the working period. e techniques should be used to remove potentially contaminated clothing. ted work clothing should not be allowed out of the workplace. Wash ed clothing before reusing. Ensure that eyewash stations and safety e close to the workstation location.
Eye/face protection	assessmer jases or d	wear complying to ISO 16321-1:2022 should be used when a risk at indicates this is necessary to avoid exposure to liquid splashes, mists, usts. If contact is possible, the following protection should be worn, assessment indicates a higher degree of protection: safety glasses with s.
Skin protection		
Hand protection	be worn at his is nece check durin should be i lifferent fo	esistant, impervious gloves complying with an approved standard should all times when handling chemical products if a risk assessment indicates essary. Considering the parameters specified by the glove manufacturer, ng use that the gloves are still retaining their protective properties. It noted that the time to breakthrough for any glove material may be r different glove manufacturers. In the case of mixtures, consisting of ostances, the protection time of the gloves cannot be accurately
	esistance The breakt The instruc- storage, m Gloves sho naterial. Always ens correctly. The perform damage ar Barrier crea	o one glove material or combination of materials that will give unlimited to any individual or combination of chemicals. hrough time must be greater than the end use time of the product. etions and information provided by the glove manufacturer on use, aintenance and replacement must be followed. build be replaced regularly and if there is any sign of damage to the glove sure that gloves are free from defects and that they are stored and used mance or effectiveness of the glove may be reduced by physical/chemical ad poor maintenance. ams may help to protect the exposed areas of the skin but should not be be exposure has occurred.
	May be use	ble gloves tested to ISO 374-1:2016. ed, gloves(breakthrough time) 4 - 8 hours: nitrile rubber (> 0.75 mm), > 0.35 mm), polyvinyl alcohol (PVA) (> 0.3 mm)
Body protection	peing perfo	rotective equipment for the body should be selected based on the task ormed and the risks involved and should be approved by a specialist dling this product.
Other skin protection	elected ba	e footwear and any additional skin protection measures should be ased on the task being performed and the risks involved and should be by a specialist before handling this product.
Respiratory protection	appropriate espiratory aspects of f workers a espirator a vhen spray	he hazard and potential for exposure, select a respirator that meets the e standard or certification. Respirators must be used according to a protection program to ensure proper fitting, training, and other important use. are exposed to concentrations above the exposure limit, they must use a according to EN 140. Use respiratory mask with charcoal and dust filter <i>y</i> ing this product, according to EN 14387(as filter combination A2-P2). In baces, use compressed-air or fresh-air respiratory equipment. When use
	of roller or	brush, consider use of charcoalfilter.

Section 9. Physical and chemical properties and safety characteristics

The conditions of measurement of all properties are at standard temperature and pressure unless otherwise indicated.

<u>Appearance</u>		
Physical state	:	Liquid.
Colour	1	Various colours.
Odour	:	Characteristic.
Odour threshold	:	Not available.
рН	:	8-9.5
Melting point/freezing point	:	0
Boiling point, initial boiling point, and boiling range	1	Lowest known value: 100°C (212°F) (water). Weighted average: 107.32°C (225.2°F)
Flash point	:	Not available.
Evaporation rate	:	0.36 (water) compared with butyl acetate
Flammability	:	Not applicable.
Lower and upper explosion limit/flammability limit	1	0.6 - 4.2%
Vapour pressure	1	Highest known value: 2.3 kPa (17.5 mm Hg) (at 20°C) (water). Weighted average: 2.19 kPa (16.43 mm Hg) (at 20°C)
Relative vapour density	:	Highest known value: 7.5 (Air = 1) (propanoic acid, 2-methyl-, monoester with 2,2,4-trimethyl-1,3-pentanediol).
Relative density	:	1.17 g/cm ³
Solubility	:	cold water Easily soluble hot water Easily soluble
Partition coefficient: n- octanol/water	1	Not available.
Auto-ignition temperature	:	Not applicable.
Decomposition temperature	:	Not available.
Viscosity	:	Kinematic (40°C (104°F)): >20.5 mm²/s (>20.5 cSt)
Flow time (ISO 2431)	:	Not available.
Particle characteristics		
Median particle size	:	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	: No specific data.
Incompatible materials	: Keep away from the following materials to prevent strong exothermic reactions: oxidising agents, strong alkalis, strong acids.
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
zinc pyrithione	LC50 Inhalation Dusts and mists	Rat	0.14 mg/l	4 hours
	LD50 Dermal	Rat	2000 mg/kg	-
	LD50 Oral	Rat	221 mg/kg	-
2-octyl-2h-isothiazol-3-one (OIT)	LD50 Dermal	Rabbit	690 mg/kg	-
(),	LD50 Dermal	Rabbit	690 mg/kg	-
	LD50 Oral	Rat	550 mg/kg	-
C(M)IT/MIT (3:1)	LD50 Oral	Rat	53 mg/kg	-

Irritation/Corrosion

Product/ingredient name	Result	Species	Score	Exposure	Observation
zinc pyrithione		Mammal - species unspecified	-	-	-

Sensitisation

Product/ingredient name	Route of exposure	Species	Result
(OIT)	skin	Mammal - species unspecified	Sensitising
C(M)IT/MIT (3:1)	skin	Mammal - species unspecified	Sensitising

Mutagenicity

Not available.

Carcinogenicity

Not available.

Reproductive toxicity

Not available.

Teratogenicity

Not available.

Specific target organ toxicity (single exposure)

Not available.

Specific target organ toxicity (repeated exposure)

Product/ingredient name	Category	Route of exposure	Target organs
diuron (encapsulated)	Category 2	-	-
diuron (ISO); 3-(3,4-dichlorophenyl)-1,1-dimethylurea	Category 2	-	-
zinc pyrithione	Category 1	-	-

Aspiration hazard

Not available.

Information on likely routes : Not available.

of	ex	pos	ure

posure

Potential acute health effectsEye contact: No known significant effects or critical hazards.Inhalation: No known significant effects or critical hazards.Skin contact: May cause an allergic skin reaction.

Section 11. Toxicological information

Ingestion

: No known significant effects or critical hazards.

Symptoms related to the physical, chemical and toxicological characteristics				
Eye contact	: No specific data.			
Inhalation	: No specific data.			

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Skin contact	: Adverse symptoms may include the following:
	irritation
	redness
Ingestion	: No specific data.

Delayed and immediate effec	ts	as well as chronic effects from short and long-term exposure
Short term exposure		
Potential immediate effects	:	Not available.
Potential delayed effects	1	Not available.
Long term exposure		
Potential immediate effects	:	Not available.
Potential delayed effects	1	Not available.
Potential chronic health effe	ect	<u>s</u>
Not available.		
General	:	Once sensitized, a severe allergic reaction may occur when subsequently exposed to very low levels.
Carcinogenicity	:	No known significant effects or critical hazards.
Mutagenicity	:	No known significant effects or critical hazards.
Reproductive toxicity	:	No known significant effects or critical hazards.

Numerical measures of toxicity

Acute toxicity estimates

Product/ingredient name	Oral (mg/ kg)	Dermal (mg/kg)	Inhalation (gases) (ppm)	Inhalation (vapours) (mg/l)	Inhalation (dusts and mists) (mg/l)
diuron (encapsulated)	500	N/A	N/A	N/A	N/A
diuron (ISO); 3-(3,4-dichlorophenyl) -1,1-dimethylurea	1017	N/A	N/A	N/A	N/A
zinc pyrithione	221	N/A	N/A	N/A	0.14
2-octyl-2h-isothiazol-3-one (OIT)	125	311	N/A	N/A	0.27
C(M)IT/MIT (3:1)	53	50	N/A	0.5	N/A

Section 12. Ecological information

Toxicity

Section 12. Ecological information

Product/ingredient name	Result	Species	Exposure
diuron (ISO); 3- (3,4-dichlorophenyl) -1,1-dimethylurea	Acute EC50 0.022 mg/l	Algae	72 hours
	Acute EC50 1.4 mg/l	Daphnia	48 hours
	Acute LC50 14.7 mg/l	Fish	96 hours
	Chronic NOEC 0.0032 mg/l	Algae	96 hours
	Chronic NOEC 0.56 mg/l	Daphnia	21 days
	Chronic NOEC 0.41 mg/l	Fish	28 days
zinc pyrithione	Acute EC50 0.067 mg/l	Algae	72 hours
	Acute EC50 0.051 mg/l	Daphnia	48 hours
	Acute LC50 0.0104 mg/l	Fish	96 hours
	Chronic NOEC 2.7 ppb Marine water	Daphnia - Daphnia magna	21 days
2-octyl-2h-isothiazol-3-one (OIT)	Acute EC50 0.084 mg/l	Algae - Scenedesmus subspicatus	72 hours
. ,	Acute EC50 0.32 mg/l	Daphnia	48 hours
	Acute LC50 0.047 mg/l	Fish	96 hours
C(M)IT/MIT (3:1)	Acute EC50 0.048 mg/l	Algae - Pseudokirchneriella subcapitata	72 hours
	Acute EC50 0.0052 mg/l	Algae - Skeletonema costatum	48 hours
	Acute EC50 0.1 mg/l	Daphnia - Daphnia magna	48 hours
	Acute LC50 0.22 mg/l	Fish - Oncorhynchus mykiss	96 hours
	Acute NOEC 0.00064 mg/l	Algae - Skeletonema costatum	48 hours
	Chronic NOEC 0.0012 mg/l	Algae - Pseudokirchneriella subcapitata	72 hours
	Chronic NOEC 0.004 mg/l	Daphnia - Daphnia magna	21 days
	Chronic NOEC 0.098 mg/l	Fish - Oncorhynchus mykiss	28 days

Persistence and degradability

Product/ingredient name	Aquatic half-life	Photolysis	Biodegradability
diuron (ISO); 3- (3,4-dichlorophenyl) -1,1-dimethylurea	-	-	Not readily
C(M)IT/MIT (3:1)	-	-	Not readily

Bioaccumulative potential

Product/ingredient name	LogPow	BCF	Potential
diuron (ISO); 3- (3,4-dichlorophenyl) -1,1-dimethylurea	2.84	5.2	low
zinc pyrithione 2-octyl-2h-isothiazol-3-one	0.9 2.45	11 -	low low
(OIT) C(M)IT/MIT (3:1)	-	3.16	low

Mobility in soil

Soil/water partition coefficient (Koc)	: 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 minimised 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 should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers.

Section 14. Transport information

	UN	IMDG	IATA			
UN number	Not regulated.	Not regulated.	Not regulated.			
UN proper shipping name	-	-	-			
Transport hazard class(es)	-	-	-			
Packing group	-	-	-			
Environmental hazards	No.	No.	No.			

ADR / RID

UN

Type

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.

Transport in bulk according : Not available. to IMO instruments

Section 15. Regulatory information

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Hazardous Substances Act

Ingredient name	CAS number	Threshold	<u>Type</u>	<u>Authority</u>	Conditions
aldehydes	7632-00-0	-	3	The Food and Drug Administration	In Products used in household or public health activity with purposes for disinfecting floor, wall, sanitary ware, and other materials or for anti-clogging of drainage system or sewer line
aldehydes	7632-00-0	-	3	Department of Livestock Development	In products used in animal feed manufacturing, animal farm, slaughter house

Section 15. Regulatory information

					and meat processing product manufacturing for purposes of disinfection and cleaning or for anti- clogging of drainage system or sewer line
diuron	330-54-1	-	3	Department of Agriculture	Except the part on responsibility of Department of Industrial Works
diuron	330-54-1	-	3	Department of Industrial Works	Except the part on responsibility of Department of Agriculture

Harmful Chemicals List : Listed

International regulations

Chemical Weapon Convention List Schedules I, II & III Chemicals

Not listed.

Montreal Protocol

Not listed.

Stockholm Convention on Persistent Organic Pollutants

Not listed.

Rotterdam Convention on Prior Informed Consent (PIC) Not listed.

UNECE Aarhus Protocol on POPs and Heavy Metals

Not listed.

Section 16. Other information

<u>History</u>	
Date of printing	: 19.12.2023
Date of issue/Date of revision	: 19.12.2023
Date of previous issue	: 15.12.2023
Version	: 1.01
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 = International Air Transport Association IBC = 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) N/A = Not available SGG = Segregation Group UN = United Nations

Procedure used to derive the classification

Classification	Justification
SKIN SENSITISATION - Category 1A	Calculation method
SHORT-TERM (ACUTE) AQUATIC HAZARD - Category 2	Calculation method
LONG-TERM (CHRONIC) AQUATIC HAZARD - Category 3	Calculation method

References

: Not available.

Date of issue/Date of revision

: 19.12.2023

Section 16. Other information

Indicates information that has changed from previously issued version.

Notice to reader

The information in this document is given to the best of Jotun's knowledge, based on laboratory testing and practical experience. Jotun's products are considered as semi-finished goods and as such, products are often used under conditions beyond Jotun's control. Jotun cannot guarantee anything but the quality of the product itself. Minor product variations may be implemented in order to comply with local requirements. Jotun reserves the right to change the given data without further notice.

Users should always consult Jotun for specific guidance on the general suitability of this product for their needs and specific application practices.

If there is any inconsistency between different language issues of this document, the English (United Kingdom) version will prevail.