

## Jotashield Flex (KH)

### Section 1. Identification

GHS product identifier	: Jotashield Flex (KH)
Other means of identification	: Not available.
Product code	: 35562
Product description	: Waterborne paint.
Product type	: Liquid.

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

##### Identified uses

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	: SHORT-TERM (ACUTE) AQUATIC HAZARD - Category 3 LONG-TERM (CHRONIC) AQUATIC HAZARD - Category 3
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#### GHS label elements

Signal word	: No signal word.
Hazard statements	: H412 - Harmful to aquatic life with long lasting effects.
Precautionary statements	
General	: P102 - Keep out of reach of children.
Prevention	: P273 - Avoid release to the environment.
Response	: Not applicable.
Storage	: Not applicable.
Disposal	: P501 - Dispose of contents and container in accordance with all local, regional, national and international regulations.
Other hazards which do not result in classification	: None known.

## Section 3. Composition/information on ingredients

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

### CAS number/other identifiers

CAS number : Not applicable.  
 EC number : Mixture.  
 Product code : 35562

Ingredient name	%	CAS number
benzophenone	≤0.3	119-61-9
diuron	≤0.096	330-54-1
zinc pyrithione	≤0.076	13463-41-7
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** : Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur. Wash clothing before reuse. Clean shoes thoroughly before reuse.
- Ingestion** : Wash out mouth with water. Remove dentures if any. Remove victim to fresh air and keep at rest in a position comfortable for breathing. 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 : No known significant effects or critical hazards.  
 Ingestion : No known significant effects or critical hazards.

#### Over-exposure signs/symptoms

- Eye contact : No specific data.  
 Inhalation : No specific data.  
 Skin contact : No specific data.  
 Ingestion : No specific data.

## Section 4. First aid measures

### Indication of immediate medical 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.

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 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".

**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 containment 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.

## Section 6. Accidental release measures

- 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** : 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. Store in original container protected 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 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	<b>Ministry of Labor (Thailand, 8/2017).</b> TWA: 10 mg/m <sup>3</sup> 8 hours.

- Recommended monitoring procedures** : If this product contains ingredients with exposure limits, personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment. Reference should be made to appropriate monitoring standards. Reference to national guidance documents for methods for the determination of hazardous substances will also be required.

- 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.

### 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. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

- Eye/face protection** : Safety eyewear complying to EN 166 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.

### Skin protection

## Section 8. Exposure controls/personal protection

- Hand protection** : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.
- There is no one glove material or combination of materials that will give unlimited resistance to any individual or combination of chemicals. The breakthrough time must be greater than the end use time of the product. The instructions and information provided by the glove manufacturer on use, storage, maintenance and replacement must be followed. Gloves should be replaced regularly and if there is any sign of damage to the glove material. Always ensure that gloves are free from defects and that they are stored and used correctly. The performance or effectiveness of the glove may be reduced by physical/chemical damage and poor maintenance. Barrier creams may help to protect the exposed areas of the skin but should not be applied once exposure has occurred. Wear suitable gloves tested to EN374. May be used, gloves(breakthrough time) 4 - 8 hours: polyvinyl alcohol (PVA) Recommended, gloves(breakthrough time) > 8 hours: nitrile rubber, neoprene, PVC
- 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.
- 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.
- Respiratory protection** : Based on the hazard and potential for exposure, select a respirator that meets the appropriate standard or certification. Respirators must be used according to a respiratory protection program to ensure proper fitting, training, and other important aspects of use.
- If workers are exposed to concentrations above the exposure limit, they must use a respirator according to EN 140. Use respiratory mask with charcoal and dust filter when spraying this product, according to EN 14387(as filter combination A2-P2). In confined spaces, use compressed-air or fresh-air respiratory equipment. When use of roller or brush, consider use of charcoalfilter.

## Section 9. Physical and chemical properties

### Appearance

- Physical state** : Liquid.
- Colour** : Various
- Odour** : Characteristic.
- Odour threshold** : Not available.
- pH** : Not available.
- Melting point** : 0
- Boiling point** : Lowest known value: 100°C (212°F) (water).
- Flash point** : Not available.
- Burning time** : Not applicable.
- Burning rate** : Not applicable.
- Evaporation rate** : 0.36 (water) compared with butyl acetate
- Flammability (solid, gas)** : Not applicable.
- Lower and upper explosive (flammable) limits** : Not applicable.

## Section 9. Physical and chemical properties

Vapour pressure	: Highest known value: 3.2 kPa (23.8 mm Hg) (at 20°C) (water).
Vapour density	: Not available.
Relative density	: 1.24 to 1.39 g/cm <sup>3</sup>
Solubility	: Easily soluble in the following materials: cold water and hot water.
Partition coefficient: n-octanol/ water	: Not available.
Auto-ignition temperature	: Not applicable.
Decomposition temperature	: Not available.
SADT	: Not available.
Viscosity	: Kinematic (40°C): >0.205 cm <sup>2</sup> /s (>20.5 mm <sup>2</sup> /s)

## 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
benzophenone	LD50 Dermal	Rabbit	3535 mg/kg	-
	LD50 Oral	Rat	>10 g/kg	-
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	-
C(M)IT/MIT (3:1)	LD50 Oral	Rat	53 mg/kg	-

#### Irritation/Corrosion

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

#### Sensitisation

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

#### Mutagenicity

Not available.

#### Carcinogenicity

Not available.

#### Reproductive toxicity

Not available.

#### Teratogenicity

## Section 11. Toxicological information

Not available.

### [Specific target organ toxicity \(single exposure\)](#)

Not available.

### [Specific target organ toxicity \(repeated exposure\)](#)

Name	Category	Route of exposure	Target organs
diuron (ISO); 3-(3,4-dichlorophenyl)-1,1-dimethylurea	Category 2	Not determined	Not determined

### [Aspiration hazard](#)

Not available.

### [Potential acute health effects](#)

Eye contact	: No known significant effects or critical hazards.
Inhalation	: No known significant effects or critical hazards.
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](#)

Inhalation	: No specific data.
Ingestion	: No specific data.
Skin contact	: No specific data.
Eye contact	: No specific data.

### [Potential chronic health effects](#)

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](#)

Not available.

## Section 12. Ecological information

### [Toxicity](#)

Product/ingredient name	Result	Species	Exposure
benzophenone	Acute LC50 10 mg/l Fresh water	Fish - Pimephales promelas - Larvae	96 hours
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

## Section 12. Ecological information

C(M)IT/MIT (3:1)	Acute LC50 0.0104 mg/l Chronic NOEC 2.7 ppb Marine water Acute EC50 0.027 mg/l	Fish Daphnia - Daphnia magna Algae - Selenastrum capricornutum	96 hours 21 days 72 hours
	Acute EC50 0.16 mg/l Acute LC50 0.19 mg/l Chronic NOEC 0.1 mg/l Chronic NOEC 0.05 mg/l	Daphnia - Daphnia magna Fish - Oncorhynchus mykiss Daphnia Fish	48 hours 96 hours 21 days 14 days

### Persistence and degradability

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

### Bioaccumulative potential

Product/ingredient name	LogP <sub>ow</sub>	BCF	Potential
benzophenone	3.18	12.02	low
diuron (ISO); 3-(3,4-dichlorophenyl)-1,1-dimethylurea	2.84	5.2	low
zinc pyrithione	0.9	11	low

### Mobility in soil

Soil/water partition coefficient (K<sub>oc</sub>) : 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)	-	-	-



## Section 14. Transport information

Packing group	-	-	-
Environmental hazards	No.	No.	No.
Special precautions for user	<b>Transport within user's premises:</b> 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.	<b>Transport within user's premises:</b> 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.	<b>Transport within user's premises:</b> 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.
Additional information	-	-	-

Transport in bulk according to : Not available.  
 Annex II of Marpol and the  
 IBC Code  
 ADR / RID

## Section 15. Regulatory information

[Hazardous Substance Act B.E. 2535 \(1992\)](#)

[Type](#)

[Ingredient name](#)

aldehydes

[Type](#)

3

[Authority](#)

The Food and Drug  
Administration

[Conditions](#)

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

3

Department of  
Livestock Development

In products used in animal feed manufacturing, animal farm, slaughter house and meat processing product manufacturing for purposes of disinfection and cleaning or for anti-clogging of drainage system or sewer line  
 Except the part on responsibility of Department of Industrial Works  
 Except the part on responsibility of Department of Agriculture

diuron

3

Department of  
Agriculture

diuron

3

Department of  
Industrial Works

No known specific national and/or regional regulations applicable to this product (including its ingredients).

## Section 16. Other information

### History

Date of printing : 04.12.2020

Date of issue/Date of revision : 04.12.2020

Date of previous issue : 26.07.2018

Version : 1.03

**Key to abbreviations** : 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  
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  
MARPOL = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)  
RID = The Regulations concerning the International Carriage of Dangerous Goods by Rail  
UN = United Nations  
LogPow = logarithm of the octanol/water partition coefficient

**References** : Not available.

✔ 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.