

# SAFETY DATA SHEET



Iloform TDN 81

## Section 1. Identification

**GHS product identifier** Iloform TDN 81  
**Product type** Liquid.  
**Product code** 450946-MY01  
**SDS no.** 450946

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

**Product use** Metalworking fluid - neat.  
For specific application advice see appropriate Technical Data Sheet or consult our company representative.

**Supplier** Castrol Singapore Pte. Limited (202034037D)  
7 Straits View  
Marina One East Tower  
#26-01, Singapore 018936

Tel: +65-6335 3000

**EMERGENCY TELEPHONE NUMBER** Carechem: +65 3158 1074 (24/7)

**OTHER PRODUCT INFORMATION** +656 371-8259

## Section 2. Hazards identification

**Classification of the substance or mixture** REPRODUCTIVE TOXICITY - Effects on or via lactation  
SHORT-TERM (ACUTE) AQUATIC HAZARD - Category 1  
LONG-TERM (CHRONIC) AQUATIC HAZARD - Category 1

### GHS label elements

#### Hazard pictograms



**Signal word** Warning

**Hazard statements** H362 - May cause harm to breast-fed children.  
H410 - Very toxic to aquatic life with long lasting effects.

#### **Precautionary statements**

##### **Prevention**

P201 - Obtain special instructions before use.  
P273 - Avoid release to the environment.  
P263 - Avoid contact during pregnancy or while nursing.  
P270 - Do not eat, drink or smoke when using this product.  
P264 - Wash hands thoroughly after handling.

##### **Response**

P391 - Collect spillage.  
P308 + P313 - IF exposed or concerned: Get medical attention.

##### **Storage**

Not applicable.

##### **Disposal**

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

**Product name** Iloform TDN 81

**Product code** 450946-MY01 **Page:** 1/10

**Version** 5.01 **Date of issue** 05/11/2021.

**Format** Singapore

**Language** ENGLISH

(Singapore)

(ENGLISH)

## Section 2. Hazards identification

## Section 3. Composition/information on ingredients

**Substance/mixture** Mixture

Highly refined mineral oil and additives

Ingredient name	%	CAS number
Alkanes, C14-17, chloro	≥75 - ≤90	85535-85-9
Distillates (petroleum), solvent-dewaxed heavy paraffinic	≤5	64742-65-0
Distillates (petroleum), hydrotreated heavy paraffinic	≤5	64742-54-7
Residual oils (petroleum), solvent-dewaxed	≤3	64742-62-7
Residual oils (petroleum), hydrotreated	≤3	64742-57-0
Alkanes, (C10-13), chloro	<1	85535-84-8

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

<b>Eye contact</b>	In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Eyelids should be held away from the eyeball to ensure thorough rinsing. Check for and remove any contact lenses. Get medical attention if symptoms occur.
<b>Inhalation</b>	If inhaled, remove to fresh air. Get medical attention if symptoms occur.
<b>Skin contact</b>	Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Wash clothing before reuse. Clean shoes thoroughly before reuse. Get medical attention if symptoms occur.
<b>Ingestion</b>	Do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Get medical attention if adverse health effects persist or are severe.

### Most important symptoms/effects, acute and delayed

See Section 11 for more detailed information on health effects and symptoms.

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

<b>Notes to physician</b>	Treatment should in general be symptomatic and directed to relieving any effects.
<b>Specific treatments</b>	No specific treatment.
<b>Protection of first-aiders</b>	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.

## Section 5. Firefighting measures

### Extinguishing media

<b>Suitable extinguishing media</b>	Use foam or all-purpose dry chemical to extinguish.
<b>Unsuitable extinguishing media</b>	Do not use water jet.

**Product name** Iloform TDN 81

**Product code** 450946-MY01 **Page:** 2/10

**Version** 5.01 **Date of issue** 05/11/2021.

**Format** Singapore

**Language** ENGLISH

(Singapore)

(ENGLISH)

## Section 5. Firefighting measures

### **Specific hazards arising from the chemical**

Swarf fires - Neat metal working oils may fume, thermally decompose or ignite if they come into contact with red hot swarf. To minimise the generation of red hot swarf ensure that a sufficient flow of oil is correctly directed to the cutting edge of the tool to flood it throughout cutting operations. As an additional precaution swarf should be regularly cleared from the immediate area to prevent the risk of fire. Fire water contaminated with this material must be contained and prevented from being discharged to any waterway, sewer or drain. In a fire or if heated, a pressure increase will occur and the container may burst. This material is very toxic to aquatic life with long lasting effects.

### **Hazardous thermal decomposition products**

Combustion products may include the following:  
halogenated compounds  
carbon oxides (CO, CO<sub>2</sub>) (carbon monoxide, carbon dioxide)

### **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 positive pressure self-contained breathing apparatus (SCBA) and full turnout gear.

## 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. Put on appropriate personal protective equipment. Floors may be slippery; use care to avoid falling. Contact emergency personnel.

#### **For emergency responders**

Entry into a confined space or poorly ventilated area contaminated with vapour, mist or fume is extremely hazardous without the correct respiratory protective equipment and a safe system of work. Wear self-contained breathing apparatus. Wear a suitable chemical protective suit. Chemical resistant boots. 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. Collect spillage.

### **Methods and material for containment and cleaning up**

#### **Small spill**

Stop leak if without risk. Move containers from spill area. Absorb with an inert 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. 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. Contaminated absorbent material may pose the same hazard as the spilt product. Dispose of via a licensed waste disposal contractor.

## Section 7. Handling and storage

### Precautions for safe handling

#### **Protective measures**

Put on appropriate personal protective equipment (see Section 8). Avoid exposure - obtain special instructions before use. Avoid contact during pregnancy or while nursing. Do not ingest. Avoid contact with eyes, skin and clothing. Avoid breathing vapour or mist. 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. Avoid contact of spilt material and runoff with soil and surface waterways. Concentrations of mist, fumes and vapours in enclosed spaces may result in the formation of explosive atmospheres. Excessive splashing, agitation or heating must be avoided. During metal working, solid particles from workpieces or tools will contaminate the fluid and may cause abrasions of the skin. Where such abrasions result in a penetration of the skin, first aid treatment should be applied as soon as reasonably possible. The presence of certain metals in the workpiece or tool, such as chromium, cobalt and nickel, can contaminate the metalworking fluid, as can bacteria, and as a result may induce allergic and other skin reactions, especially if personal hygiene is inadequate.

#### **Advice on general occupational hygiene**

Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Wash thoroughly after handling. 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. Store and use only in equipment/containers designed for use with this product. 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.

## Section 8. Exposure controls/personal protection

### Control parameters

#### Occupational exposure limits

##### **Ingredient name**

##### **Exposure limits**

Distillates (petroleum), solvent-dewaxed heavy paraffinic

##### **Workplace Safety and Health Act (Singapore).**

PEL (long term): 5 mg/m<sup>3</sup> 8 hours. Issued/Revised: 1/1997 Form: Mist

PEL (short term): 10 mg/m<sup>3</sup> 15 minutes. Issued/Revised: 1/1997 Form: Mist

Distillates (petroleum), hydrotreated heavy paraffinic

##### **Workplace Safety and Health Act (Singapore).**

PEL (long term): 5 mg/m<sup>3</sup> 8 hours. Issued/Revised: 1/1997 Form: Mist

PEL (short term): 10 mg/m<sup>3</sup> 15 minutes. Issued/Revised: 1/1997 Form: Mist

Residual oils (petroleum), solvent-dewaxed

##### **Workplace Safety and Health Act (Singapore).**

PEL (long term): 5 mg/m<sup>3</sup> 8 hours. Issued/Revised: 1/1997 Form: Mist

PEL (short term): 10 mg/m<sup>3</sup> 15 minutes. Issued/Revised: 1/1997 Form: Mist

Residual oils (petroleum), hydrotreated

##### **Workplace Safety and Health Act (Singapore).**

PEL (long term): 5 mg/m<sup>3</sup> 8 hours. Issued/Revised: 1/1997 Form: Mist

PEL (short term): 10 mg/m<sup>3</sup> 15 minutes. Issued/Revised: 1/1997 Form: Mist

**Product name** Iloform TDN 81

**Product code** 450946-MY01 **Page: 4/10**

**Version** 5.01 **Date of issue** 05/11/2021.

**Format** Singapore

**Language** ENGLISH

(Singapore)

(ENGLISH)

## Section 8. Exposure controls/personal protection

### 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

Provide exhaust ventilation or other engineering controls to keep the relevant airborne concentrations below their respective occupational exposure limits. All activities involving chemicals should be assessed for their risks to health, to ensure exposures are adequately controlled. Personal protective equipment should only be considered after other forms of control measures (e.g. engineering controls) have been suitably evaluated. Personal protective equipment should conform to appropriate standards, be suitable for use, be kept in good condition and properly maintained.

Your supplier of personal protective equipment should be consulted for advice on selection and appropriate standards. For further information contact your national organisation for standards.

The final choice of protective equipment will depend upon a risk assessment. It is important to ensure that all items of personal protective equipment are compatible.

### 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 glasses with side shields.

#### Skin protection

##### Hand protection

Wear protective gloves if prolonged or repeated contact is likely. Wear chemical resistant gloves. Recommended: Nitrile gloves. The correct choice of protective gloves depends upon the chemicals being handled, the conditions of work and use, and the condition of the gloves (even the best chemically resistant glove will break down after repeated chemical exposures). Most gloves provide only a short time of protection before they must be discarded and replaced. Because specific work environments and material handling practices vary, safety procedures should be developed for each intended application. Gloves should therefore be chosen in consultation with the supplier/manufacturer and with a full assessment of the working conditions.

##### Skin protection

Use of protective clothing is good industrial practice.

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 polyester/cotton overalls will only provide protection against light superficial contamination that will not soak through to the skin. Overalls should be laundered on a regular basis. When the risk of skin exposure is high (e.g. when cleaning up spillages or if there is a risk of splashing) then chemical resistant aprons and/or impervious chemical suits and boots will be required.

##### Respiratory protection

In case of insufficient ventilation, wear suitable respiratory equipment.

The correct choice of respiratory protection depends upon the chemicals being handled, the conditions of work and use, and the condition of the respiratory equipment. Safety procedures should be developed for each intended application. Respiratory protection equipment should therefore be chosen in consultation with the supplier/manufacturer and with a full assessment of the working conditions.

## Section 9. Physical and chemical properties

### Appearance

Physical state	Liquid.
Colour	Yellow. [Dark]
Odour	Mild.
Odour threshold	Not available.
pH	Not available.
Melting point	Not available.
Boiling point	Not available.
Flash point	Closed cup: 237°C (458.6°F) [Pensky-Martens.]
Evaporation rate	Not available.
Flammability (solid, gas)	Not applicable. Based on - Physical state
Lower and upper explosive (flammable) limits	Not available.
Vapour pressure	Not available.
Vapour density	Not available.
Relative density	Not available.
Density	>1000 kg/m <sup>3</sup> (>1 g/cm <sup>3</sup> ) at 30°C
Solubility	insoluble in water.
Partition coefficient: n-octanol/water	Not available.
Auto-ignition temperature	Not available.
Decomposition temperature	Not available.
Viscosity	Kinematic: 141.1 mm <sup>2</sup> /s (141.1 cSt) at 40°C Kinematic: 10.45 mm <sup>2</sup> /s (10.45 cSt) at 100°C

## Section 10. Stability and reactivity

Reactivity	No specific test data available for this product. Refer to Conditions to avoid and Incompatible materials for additional information.
Chemical stability	The product is stable.
Possibility of hazardous reactions	Under normal conditions of storage and use, hazardous reactions will not occur. Under normal conditions of storage and use, hazardous polymerisation will not occur.
Conditions to avoid	Avoid excessive heat.
Incompatible materials	Reactive or incompatible with the following materials: oxidising materials.
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

**Information on likely routes of exposure** Routes of entry anticipated: Dermal, Inhalation.

### Potential acute health effects

<b>Eye contact</b>	No known significant effects or critical hazards.
<b>Inhalation</b>	Vapour inhalation under ambient conditions is not normally a problem due to low vapour pressure.
<b>Skin contact</b>	No known significant effects or critical hazards.
<b>Ingestion</b>	No known significant effects or critical hazards.

### Symptoms related to the physical, chemical and toxicological characteristics

<b>Eye contact</b>	No specific data.
<b>Inhalation</b>	No specific data.
<b>Skin contact</b>	Adverse symptoms may include the following: reduced foetal weight increase in foetal deaths skeletal malformations
<b>Ingestion</b>	Adverse symptoms may include the following: reduced foetal weight increase in foetal deaths skeletal malformations

### Delayed and immediate effects as well as chronic effects from short and long-term exposure

<b>Eye contact</b>	Potential risk of transient stinging or redness if accidental eye contact occurs.
<b>Inhalation</b>	Overexposure to the inhalation of airborne droplets or aerosols may cause irritation of the respiratory tract.
<b>Skin contact</b>	Prolonged or repeated contact can defat the skin and lead to irritation, cracking and/or dermatitis.
<b>Ingestion</b>	Ingestion of large quantities may cause nausea and diarrhoea.

### Potential chronic health effects

<b>General</b>	No known significant effects or critical hazards.
<b>Carcinogenicity</b>	No known significant effects or critical hazards.
<b>Mutagenicity</b>	No known significant effects or critical hazards.
<b>Teratogenicity</b>	No known significant effects or critical hazards.
<b>Developmental effects</b>	May cause harm to breast-fed children.
<b>Fertility effects</b>	No known significant effects or critical hazards.

## Section 12. Ecological information

### Toxicity

**Environmental effects** Water polluting material. May be harmful to the environment if released in large quantities. This material is very toxic to aquatic life with long lasting effects.

### Persistence/degradability

Not expected to be rapidly degradable.

## Section 12. Ecological information

Product/ingredient name	Aquatic half-life	Photolysis	Biodegradability
Alkanes, (C10-13), chloro	-	-	Not readily

### Bioaccumulative potential

Not available.

### Mobility in soil

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

Not available.

Mobility

Non-volatile. Liquid. insoluble in water.

### Other adverse effects

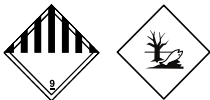
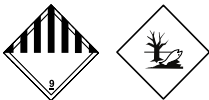
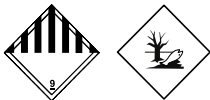
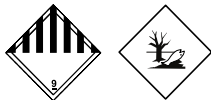
No known significant effects or critical hazards.

## Section 13. Disposal considerations

### Disposal methods

The generation of waste should be avoided or minimised wherever possible. Significant quantities of waste product residues should not be disposed of via the foul sewer but processed in a suitable effluent treatment plant. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. 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. 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

	ADR/RID	ADN	IMDG	IATA/ICAO
UN number	UN3082	UN3082	UN3082	UN3082
UN proper shipping name	Environmentally hazardous substance, liquid, n.o.s. (Alkanes, C14-17, chloro, mixture)	Environmentally hazardous substance, liquid, n.o.s. (Alkanes, C14-17, chloro, mixture)	Environmentally hazardous substance, liquid, n.o.s. mixture. Marine pollutant (Alkanes, C14-17, chloro)	Environmentally hazardous substance, liquid, n.o.s. (Alkanes, C14-17, chloro, mixture)
Transport hazard class(es)	9 	9 	9 	9 
Packing group	III	III	III	III
Environmental hazards	Yes.	Yes.	Yes.	Yes.

Product name Iloform TDN 81

Product code 450946-MY01 Page: 8/10

Version 5.01 Date of issue 05/11/2021.

Format Singapore

Language ENGLISH

(Singapore)

(ENGLISH)



## Section 14. Transport information

<b>Additional information</b>	This product is not regulated as a dangerous good when transported in sizes of ≤5 L or ≤5 kg, provided the packagings meet the general provisions of 4.1.1.1, 4.1.1.2 and 4.1.1.4 to 4.1.1.8. <b>Hazard identification number</b> 90 <b>Tunnel code</b> -	This product is not regulated as a dangerous good when transported in sizes of ≤5 L or ≤5 kg, provided the packagings meet the general provisions of 4.1.1.1, 4.1.1.2 and 4.1.1.4 to 4.1.1.8.	This product is not regulated as a dangerous good when transported in sizes of ≤5 L or ≤5 kg, provided the packagings meet the general provisions of 4.1.1.1, 4.1.1.2 and 4.1.1.4 to 4.1.1.8. <b>Emergency schedules</b> F-A, S-F	This product is not regulated as a dangerous good when transported in sizes of ≤5 L or ≤5 kg, provided the packagings meet the general provisions of 5.0.2.4.1, 5.0.2.6.1.1 and 5.0.2.8.
-------------------------------	---	---	---	--

**Special precautions for user** Not available.

## Section 15. Regulatory information

**Safety, health and environmental regulations specific for the product** No known specific national and/or regional regulations applicable to this product (including its ingredients).

**Regulation according to other foreign laws**

<b>REACH Status</b>	For the REACH status of this product please consult your company contact, as identified in Section 1.
<b>United States inventory (TSCA 8b)</b>	All components are active or exempted.
<b>Australia inventory (AICS)</b>	All components are listed or exempted.
<b>Canada inventory</b>	All components are listed or exempted.
<b>China inventory (IECSC)</b>	All components are listed or exempted.
<b>Japan inventory (ENCS)</b>	All components are listed or exempted.
<b>Korea inventory (KECI)</b>	All components are listed or exempted.
<b>Philippines inventory (PICCS)</b>	All components are listed or exempted.
<b>Taiwan Chemical Substances Inventory (TCSI)</b>	All components are listed or exempted.

## Section 16. Other information

### History

<b>Date of issue/Date of revision</b>	2021 May 11
<b>Date of previous issue</b>	2020 October 09
<b>Version</b>	5.01
<b>Prepared by</b>	Product Stewardship
<b>Key to abbreviations</b>	ACGIH = American Conference of Industrial Hygienists CAS Number = Chemical Abstracts Service Registry Number GHS = Global Harmonised System IATA = International Air Transport Association, the organisation IMDG = International Maritime Organization Rules, rules governing shipment of goods by water. OEL = Occupational Exposure Limit REACH = Registration, Evaluation, Authorisation and Restriction of Chemicals Regulation [Regulation (EC) No. 1907/2006]

<b>Product name</b>	Iloform TDN 81	<b>Product code</b>	450946-MY01	<b>Page:</b>	9/10
<b>Version</b>	5.01	<b>Date of issue</b>	05/11/2021.	<b>Format</b>	Singapore
				<b>Language</b>	ENGLISH
					(SINGAPORE)
					(ENGLISH)

## Section 16. Other information

SDS = Safety Data Sheet

STEL = Short term exposure limit

TWA = Time weighted average

UN Number = United Nations Number, a four digit number assigned by the United Nations Committee of Experts on the Transport of Dangerous Goods.

Varies = may contain one or more of the following 64741-88-4, 64741-89-5, 64741-95-3, 64741-96-4, 64742-01-4, 64742-44-5, 64742-45-6, 64742-52-5, 64742-53-6, 64742-54-7, 64742-55-8, 64742-56-9, 64742-57-0, 64742-58-1, 64742-62-7, 64742-63-8, 64742-65-0, 64742-70-7, 72623-85-9, 72623-86-0, 72623-87-1

Indicates information that has changed from previously issued version.

### Notice to reader

All reasonably practicable steps have been taken to ensure this data sheet and the health, safety and environmental information contained in it is accurate as of the date specified below. No warranty or representation, express or implied is made as to the accuracy or completeness of the data and information in this data sheet.

The data and advice given apply when the product is sold for the stated application or applications. You should not use the product other than for the stated application or applications without seeking advice from BP Group.

It is the user's obligation to evaluate and use this product safely and to comply with all applicable laws and regulations. The BP Group shall not be responsible for any damage or injury resulting from use, other than the stated product use of the material, from any failure to adhere to recommendations, or from any hazards inherent in the nature of the material. Purchasers of the product for supply to a third party for use at work, have a duty to take all necessary steps to ensure that any person handling or using the product is provided with the information in this sheet. Employers have a duty to tell employees and others who may be affected of any hazards described in this sheet and of any precautions that should be taken. You can contact the BP Group to ensure that this document is the most current available. Alteration of this document is strictly prohibited.