



## MATERIAL SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

SDS # : 33812

### AURELIA TI 4040

Date of the previous version: 2013-08-21

Revision Date: 2013-10-01

Version 3

#### 1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

##### 1.1. Product identifier

**Product name**                                    **AURELIA TI 4040**  
**Number**    JIK  
**Pure substance/mixture**                    **Mixture\*\*\***

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

**Identified uses**                                    **Marine Trunk Piston Engine Oil.\*\*\***

##### 1.3. Details of the supplier of the safety data sheet

**Supplier**    **TOTAL LUBRIFIANTS**  
     562 Avenue du Parc de L'île  
     92029 Nanterre Cedex  
     Tél: +33 (0)1 41 35 40 00  
     Fax: +33 (0)1 41 35 84 71\*\*\*

##### For further information, please contact:

**Contact Point**                                    **HSE\*\*\***  
**E-mail Address**                                   **rm.msds-lubs@total.com\*\*\***

##### 1.4. Emergency telephone number

+33 1 49 00 00 49 (24h/24, 7d/7)\*\*\*  
 France - ORFILA (INRS) Tél : +33 (0)1 45 42 59 59\*\*\*  
 In France : - PARIS : Hôpital Fernand Widal 200, rue du Faubourg Saint-Denis 75475 Paris Cédex 10 , Tel : 01.40.05.48.48. -  
 MARSEILLE : Hopital Salvator, 249 bd Ste Marguerite 13274 Marseille cedex 5, Tel : 04.91.75.25.25. - LYON : Hopital Edouard  
 Herriot, 5 place d'Arsonvol, 69437 Lyon cedex 3, Tel : 04.72.11.69.11. - NANCY : Hopital central, 29 Av du Mal De Lattre de  
 Tassigny, 54000 Nancy, Tel : 03.83.32.36.36 ou le SAMU : Tel ( 15 )\*\*\*

#### 2. HAZARDS IDENTIFICATION

##### 2.1. Classification of the substance or mixture

###### REGULATION (EC) No 1272/2008

For the full text of the H-Statements mentioned in this Section, see Section 2.2.

\*\*\*

###### DIRECTIVE 67/548/EEC or 1999/45/EC

For the full text of the R-phrases mentioned in this Section, see Section 16



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The substance/mixture is non-dangerous in accordance with Directive(s) 67/548/EEC with amendments and/or 1999/45/EC with amendments\*\*\*

**Symbol(s)**

none\*\*\*

**Classification**

R52-53 \*\*\*

2.2. Label elements**Labelled according to**

Directive 1999/45/EC\*\*\*

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**R-phrases(s)**

R52/53 - Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment\*\*\*

**S-phrases(s)**

S61 - Avoid release to the environment. Refer to special instructions/safety data sheets\*\*\*

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Contains Salts of alkyl hydroxybenzoic acid, Benzoic acid, hydroxy-, mono-C20-28-branched alkyl derivatives, calcium salt (2:1)  
May produce an allergic reaction.\*\*\*

2.3. Other hazards**Physical-Chemical Properties**

Contaminated surfaces will be extremely slippery.\*\*\*

**Environmental properties**

Should not be released into the environment.\*\*\*

**3. COMPOSITION/INFORMATION ON INGREDIENTS**3.2. Mixture\*\*\*

Chemical Name	EC-No	REACH registration No	CAS-No	Weight %	Classification (Dir. 67/548)	Classification (Reg. 1272/2008)
Salts of alkyl hydroxybenzoic acid***	-	no data available	220795-13-1	< 3	R43 Xi;R38 R53	Skin Sens. 1 (H317) Aquatic Chronic 4 (H413)
Benzoic acid, hydroxy-, mono-C20-28-branched alkyl derivatives, calcium salt (2:1)***	-	-	900185-23-1	< 2	Xi;R38 R43 R53	Skin Sens. 1 (H317) Aquatic Chronic 4 (H413)
Alkylphenate sulfured, calcium salt***	291-829-9	01-2119524004-56	90480-91-4	< 2	R53	Aquatic Chronic 4 (H413)
zinc bis[O,O-bis(2-ethylhexyl)] bis(dithiophosphate)***	224-235-5	01-2119493635-27	4259-15-8	< 1	Xi;R41 N;R51-53	Aquatic Chronic 2 (H411) Eye Dam. 1 (H318)



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Branched alkylphenol and Calcium branched alkylphenol***	-	no data available	^	< 0.5	Xi;R36/38 Repr.Cat.3;R62 N;R50-53	Skin Irrit. 2 (H315) Eye Irrit. 2 (H319) Repr. 2 (H361f) Aquatic Acute 1 (H400) Aquatic Chronic 1 (H410)
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**Additional information**

Product containing mineral oil with less than 3% DMSO extract as measured by IP 346\*\*\*

For the full text of the R-phrases mentioned in this Section, see Section 16  
 For the full text of the H-Statements mentioned in this Section, see Section 16.

**4. FIRST AID MEASURES****4.1. Description of first-aid measures**

<b>General advice</b>	IN CASE OF SERIOUS OR PERSISTENT CONDITIONS, CALL A DOCTOR OR EMERGENCY MEDICAL CARE.
<b>Eye contact</b>	Rinse thoroughly with plenty of water, also under the eyelids.***
<b>Skin contact</b>	Remove contaminated clothing and shoes. Wash skin with soap and water. Wash contaminated clothing before reuse. In the case of skin irritation or allergic reactions see a physician.***
<b>Inhalation</b>	Move to fresh air.
<b>Ingestion</b>	Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Call a physician or Poison Control Center immediately.***

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

<b>Eye contact</b>	Not classified.***
<b>Skin contact</b>	Not classified. May produce an allergic reaction.***
<b>Inhalation</b>	Not classified. Inhalation of vapors in high concentration may cause irritation of respiratory system.***
<b>Ingestion</b>	Not classified. Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea.***

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

<b>Notes to physician</b>	Treat symptomatically.
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**5. FIRE-FIGHTING MEASURES****5.1. Extinguishing media**



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**Suitable Extinguishing Media** Carbon dioxide (CO<sub>2</sub>). ABC powder. Foam. Water spray or fog.\*\*\*

**Unsuitable Extinguishing Media** Do not use a solid water stream as it may scatter and spread fire.

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

**Special Hazard** Incomplete combustion and thermolysis produces potentially toxic gases such as carbon monoxide and carbon dioxide, Sulfur oxides, Phosphorous oxides, Nitrogen oxides (NO<sub>x</sub>), Zinc oxides, Mercaptans, Hydrogen sulphide.\*\*\*

### 5.3. Advice for fire-fighters

**Special protective equipment for fire-fighters** Wear self-contained breathing apparatus and protective suit.

**Other information** Cool containers / tanks with water spray. Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.

## 6. ACCIDENTAL RELEASE MEASURES

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

**General Information** Do not touch or walk through spilled material. Contaminated surfaces will be extremely slippery. Use personal protective equipment. Ensure adequate ventilation. Remove all sources of ignition.\*\*\*

### 6.2. Environmental precautions

**General Information** Do not allow material to contaminate ground water system. Try to prevent the material from entering drains or water courses. Local authorities should be advised if significant spillages cannot be contained.\*\*\*

### 6.3. Methods and materials for containment and cleaning up

**Methods for cleaning up** Dam up. Contain spillage, and then collect with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations (see section 13). Keep in suitable, closed containers for disposal.\*\*\*

### 6.4. Reference to other sections

**Personal Protective Equipment** See Section 8 for more detail.

**Waste treatment** See section 13.

## 7. HANDLING AND STORAGE



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7.1. Precautions for safe handling**Advice on safe handling**

When using, do not eat, drink or smoke. For personal protection see section 8. Use only in well-ventilated areas. Do not breathe vapors or spray mist. Avoid contact with skin, eyes and clothing.\*\*\*

**Prevention of fire and explosion**

Take precautionary measures against static discharges: Ground/bond containers, tanks and transfer/receiving equipment.\*\*\*

**Hygiene measures**

Ensure the application of strict rules of hygiene by the personnel exposed to the risk of contact with the product. Regular cleaning of equipment, work area and clothing is recommended. Wash hands before breaks and immediately after handling the product. Do not use abrasives, solvents or fuels. Do not dry hands with rags that have been contaminated with product. Do not put product contaminated rags into workwear pockets.\*\*\*

7.2. Conditions for safe storage, including any incompatibilities**Technical measures/Storage conditions**

Keep away from food, drink and animal feedingstuffs. Keep in a bonded area. Keep container tightly closed. Keep preferably in the original container. Otherwise reproduce all indication of the regulation label on the new container. Do not remove the hazard labels of the containers (even if they are empty). Design the installations in order to avoid accidental emissions of product (due to seal breakage, for example) onto hot casings or electrical contacts. Protect from frost, heat and sunlight. Protect from moisture.\*\*\*

**Materials to Avoid**

Strong oxidizing agents.\*\*\*

7.3. Specific end uses**8. EXPOSURE CONTROLS/PERSONAL PROTECTION**8.1. Control parameters**Exposure limits**

oil mist : 10mg/m<sup>3</sup>, for 15 minutes  
oil mist : 5mg/m<sup>3</sup>, for 8 hours\*\*\*

**Legend**

See section 16

**DNEL Worker (Industrial/Professional)\*\*\***

Chemical Name	Short term, systemic effects	Short term, local effects	Long term, systemic effects	Long term, local effects
zinc bis[O,O-bis(2-ethylhexyl)] bis(dithiophosphate)*** 4259-15-8			9.6 mg/kg bw/day Dermal 6.6 mg/m <sup>3</sup> Inhalation	

**DNEL Consumer\*\*\***

Chemical Name	Short term, systemic effects	Short term, local effects	Long term, systemic effects	Long term, local effects
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zinc bis[O,O-bis(2-ethylhexyl)] bis(dithiophosphate)*** 4259-15-8			4.8 mg/kg bw/day Dermal 1.67 mg/m <sup>3</sup> Inhalation 0.19 mg/kg/bw/day Oral	
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**Predicted No Effect Concentration (PNEC)** \*\*\*

Chemical Name	Water	Sediment	Soil	Air	STP	Oral
zinc bis[O,O-bis(2-ethylhexyl)] bis(dithiophosphate) *** 4259-15-8	0.004 mg/l fw 0.0046 mg/l mw 0.044 mg/l or	0.0701 mg/kg dw fw 0.00701 mg/kg dw mw	0.0548 mg/kg dw		3.8 mg/l	8.33 mg/kg food

**8.2. Exposure controls****Occupational Exposure Controls****Engineering Measures**

Apply technical measures to comply with the occupational exposure limits. When working in confined spaces (tanks, containers, etc.), ensure that there is a supply of air suitable for breathing and wear the recommended equipment.

**Personal Protective Equipment****General Information**

If the product is used in mixtures, it is recommended that you contact the appropriate protective equipment suppliers. These recommendations apply to the product as supplied.

**Respiratory protection**

When workers are facing concentrations above the exposure limit they must use appropriate certified respirators. Respirator with combination filter for vapour/particulate (EN 14387). The use of breathing apparatus must comply strictly with the manufacturer's instructions and the regulations governing their choices and uses.\*\*\*

**Eye Protection**

If splashes are likely to occur, wear: Safety glasses with side-shields.

**Skin and body protection**

Wear suitable protective clothing. Protective shoes or boots. Long sleeved clothing.\*\*\*

**Hand Protection**

Hydrocarbon-proof gloves: Fluorinated rubber, Nitrile rubber. Please observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves. Also take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion. If used in solution, or mixed with other substances, and under conditions which differ from EN 374, contact the supplier of the EC approved gloves.\*\*\*

**Environmental exposure controls****General Information**

The product should not be allowed to enter drains, water courses or the soil.

**9. PHYSICAL AND CHEMICAL PROPERTIES**



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9.1. Information on basic physical and chemical properties

Color		yellow***	
Physical State @20°C		liquid***	
Odor		Characteristic***	
Property	Values	Remarks	Method
pH		Not applicable***	
Boiling point/boiling range		Not applicable***	
Flash point ***	>*** 230*** °C*** >*** 446*** °F***		ASTM D92*** ASTM D92.***
Evaporation rate		No information available***	
Flammability Limits in Air		No information available	
Vapor Pressure		No information available***	
Vapor density		No information available***	
Density	910*** kg/m <sup>3</sup> ***	@ 15 °C***	ASTM D1298***
Water solubility		No information available***	
Solubility in other solvents		No information available***	
logPow		No information available***	
Autoignition temperature		No information available***	
Viscosity, kinematic ***	*** 127*** mm <sup>2</sup> /s***	@ 40 °C ***	ISO 3104 ***
Explosive properties	Not explosive***		
Oxidizing Properties	Not applicable***		
Possibility of hazardous reactions	Not applicable***		

9.2. Other information**10. STABILITY AND REACTIVITY**10.1. Reactivity10.2. Chemical stability

**Stability** Stable under recommended storage conditions.\*\*\*

10.3. Possibility of hazardous reactions

**Hazardous Reactions** None under normal processing.\*\*\*

10.4. Conditions to Avoid

**Conditions to Avoid** Heat (temperatures above flash point), sparks, ignition points, flames, static electricity. Heat, flames and sparks. Take precautionary measures against static discharges. Strong oxidizing agents.\*\*\*

10.5. Incompatible Materials



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**Materials to Avoid** Strong oxidizing agents.\*\*\*10.6. Hazardous Decomposition Products

**Hazardous Decomposition Products** None under normal use. Incomplete combustion and thermolysis may produce gases of varying toxicity such as carbon monoxide, carbon dioxide, various hydrocarbons, aldehydes and soot, Nitrogen oxides (NOx), Sulfur oxides, Phosphorous oxides, Mercaptans, Hydrogen sulphide.\*\*\*

11. TOXICOLOGICAL INFORMATION11.1. Information on toxicological effectsAcute toxicity Local effects Product Information

- Skin contact** . Not classified. May produce an allergic reaction.\*\*\*
- Eye contact** . Not classified.\*\*\*
- Inhalation** . Not classified. Inhalation of vapors in high concentration may cause irritation of respiratory system.\*\*\*
- Ingestion** . Not classified. Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea.\*\*\*

Acute toxicity - Component Information

Chemical Name	LD50 Oral	LD50 Dermal	LC50 Inhalation
Alkylphenate sulfurised, calcium salt***	LD50 >5000 mg/kg Oral	LD50 >5000 mg/kg Dermal	
zinc bis[O,O-bis(2-ethylhexyl)] bis(dithiophosphate)***	= 3100 mg/kg ( Rat )	> 5000 mg/kg ( Rabbit )	

Sensitization

**Sensitization** Not classified as a sensitizer. Contains sensitizer(s). May produce an allergic reaction. The supplier of one of the components contained within this formulation has indicated that they have data, which confirms that at the concentration used, no sensitisation classification is required .\*\*\*

Specific effects

**Carcinogenicity** This product is not classified carcinogenic. During use in engines, contamination of oil with low levels of combustion products occurs. Used motor oils have been shown to cause skin cancer in mice following repeated application and continuous exposure. Brief or intermittent skin contact with used motor oil is not expected to have serious effects in humans if the oil is thoroughly removed by washing with soap and water.\*\*\*

**Mutagenicity** This product is not classified as mutagenic.\*\*\*

**Reproductive toxicity** This product does not present any known or suspected reproductive hazards.\*\*\*



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**Repeated Dose Toxicity****Subchronic toxicity** No information available.\*\*\***Target Organ Effects (STOT)****Target Organ Effects (STOT)** No information available.\*\*\***Other information****Other adverse effects** Characteristic skin lesions (pimples) may develop following prolonged and repeated exposures (contact with contaminated clothing).\*\*\***12. ECOLOGICAL INFORMATION****12.1. Toxicity**

Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.\*\*\*

**Acute aquatic toxicity - Product Information**

No information available.\*\*\*

**Acute aquatic toxicity - Component Information**

\*\*\*

Chemical Name	Toxicity to algae	Toxicity to daphnia and other aquatic invertebrates	Toxicity to fish	Toxicity to microorganisms
Alkylphenate sulfurised, calcium salt*** 90480-91-4	EC50 (72h) > 500 mg/l (Desmodesmus subspicatus - OECD 201)	EL50 (48h) > 1000 mg/l (Daphnia magna - OECD 202)	LC50 (96h) > 1000 mg/l (Pimephales promelas - OECD 203)	
zinc bis[O,O-bis(2-ethylhexyl)] bis(dithiophosphate)*** 4259-15-8	EC50 (72h) > 240 mg/l (Desmodesmus subspicatus)	EC50 (48h) > 1 - < 10 mg/l (Daphnia magna - OECD 202)	LC50 (96h) 1 - 10 mg/l (Oncorhynchus mykiss - OECD 203)	

**Chronic aquatic toxicity - Product Information**

No information available.\*\*\*

**Chronic aquatic toxicity - Component Information**

\*\*\*

**Effects on terrestrial organisms**

No information available.\*\*\*

**12.2. Persistence and degradability****General Information**

No information available.



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**12.3. Bioaccumulative potential****Product Information** No information available.**logPow** No information available\*\*\***Component Information**

Chemical Name	log Pow
Alkylphenate sulfurised, calcium salt*** - 90480-91-4	9.5
zinc bis[O,O-bis(2-ethylhexyl)] bis(dithiophosphate)*** - 4259-15-8	3.6

**12.4. Mobility in soil****Soil** Given its physical and chemical characteristics, the product generally shows low soil mobility.\*\*\***Air** Loss by evaporation is limited.\*\*\***Water** Insoluble. The product spreads on the surface of the water.\*\*\***12.5. Results of PBT and vPvB assessment****PBT and vPvB assessment** No information available.\*\*\***12.6. Other adverse effects****General Information** No information available.\*\*\***13. DISPOSAL CONSIDERATIONS****13.1. Waste treatment methods**

**Waste from Residues / Unused Products** Should not be released into the environment. Dispose of in accordance with the European Directives on waste and hazardous waste. Dispose of in accordance with local regulations. Where possible recycling is preferred to disposal or incineration. After use, this oil must be sent to a licensed waste oil facility. Incorrect disposal of used oil poses a risk to the environment. Mixture with other waste types such as solvents, brake- and cooling liquids is forbidden.\*\*\*

**Contaminated packaging** Empty containers should be taken to an approved waste handling site for recycling or disposal.

**EWG Waste Disposal No.** The following Waste Codes are only suggestions: 13 02 05. According to the European Waste Catalogue, Waste Codes are not product specific, but application specific. Waste codes should be assigned by the user based on the application for which the product was used.\*\*\*

**14. TRANSPORT INFORMATION**



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<u>ADR/RID</u>	Not regulated
<u>IMDG/IMO</u>	Not regulated
<u>ICAO/IATA</u>	Not regulated
<u>ADN</u>	Not regulated

## 15. REGULATORY INFORMATION

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

European Union

International Inventories

<b>EINECS/ELINCS</b>	-
<b>TSCA</b>	-
<b>DSL</b>	-
<b>ENCS</b>	-
<b>IECSC</b>	-
<b>KECL</b>	-
<b>PICCS</b>	-
<b>AICS</b>	-
<b>NZIoC</b>	-

Legend**EINECS/ELINCS** - European Inventory of Existing Commercial Chemical Substances/EU List of Notified Chemical Substances**TSCA** - United States Toxic Substances Control Act Section 8(b) Inventory**DSL/NDL** - Canadian Domestic Substances List/Non-Domestic Substances List**ENCS** - Japan Existing and New Chemical Substances**IECSC** - China Inventory of Existing Chemical Substances**KECL** - Korean Existing and Evaluated Chemical Substances**PICCS** - Philippines Inventory of Chemicals and Chemical Substances**AICS** - Australian Inventory of Chemical Substances**NZIoC** - New Zealand Inventory of Chemicals

Further information

15.2. Chemical Safety Assessment**Chemical Safety Assessment**      No information available\*\*\*



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**16. OTHER INFORMATION****Full text of R-phrases referred to under sections 2 and 3**

R43 - May cause sensitization by skin contact  
 R53 - May cause long-term adverse effects in the aquatic environment  
 R38 - Irritating to skin  
 R41 - Risk of serious damage to eyes  
 R62 - Possible risk of impaired fertility\*\*\*  
 R51/53 - Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment  
 R50/53 - Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment  
 R36/38 - Irritating to eyes and skin  
 R52/53 - Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment\*\*\*

**Full text of H-Statements referred to under sections 2 and 3**

H315 - Causes skin irritation  
 H317 - May cause an allergic skin reaction  
 H318 - Causes serious eye damage  
 H319 - Causes serious eye irritation  
 H361f - Suspected of damaging fertility  
 H400 - Very toxic to aquatic life  
 H410 - Very toxic to aquatic life with long lasting effects  
 H411 - Toxic to aquatic life with long lasting effects  
 H413 - May cause long lasting harmful effects to aquatic life\*\*\*

**Abbreviations, acronyms****Legend Section 8**

+	Sensitizer	*	Skin designation
**	Hazard Designation	C:	Carcinogen
M:	Mutagen	R:	Toxic to reproduction

Revision Date: 2013-10-01

Revision Note: \*\*\* Indicates updated section.

This safety data sheet complies with the requirements of Regulation (EC) No. 1907/2006

This safety data sheet serves to complete but not to replace the technical product sheets. The information contained herein is given in good faith and is accurate to the best of knowledge at the date indicated above. It is understood by the user that any use of the product for purposes other than those for which it was designed entails potential risk. The information given herein in no way dispenses the user from knowing and applying all provisions regulating his activity. The user bears sole liability for the precautions required when using the product. The regulatory texts indicated herein are intended to aid the user to fulfil his obligations. This list is not to be considered complete and exhaustive. It is the user's responsibility to ensure that he is subject to no other obligations than those mentioned.

End of the safety data sheet