

Product Name: TOYOTA AUTO FLUID WS
Revision Date: 08 Dec 2009
Page 1 of 12

MATERIAL SAFETY DATA SHEET

SECTION 1 PRODUCT AND COMPANY IDENTIFICATION

As of the revision date above, this (M)SDS meets the regulations in Japan.

PRODUCT

Product Name: TOYOTA AUTO FLUID WS
Product Description: Base Oil and Additives
Product Code: 520171-87
Intended Use: Automatic transmission fluid

COMPANY IDENTIFICATION

Supplier: ExxonMobil Yugen Kaisha
Lubricants & Specialties
W Building
1-8-15, Kohnan, Minato-ku
Tokyo 108-8005 Japan

Supplier General Contact

81-0120-016-313

SECTION 2 COMPOSITION / INFORMATION ON INGREDIENTS

This material is regulated as a preparation.

Reportable Hazardous Substance(s) or Complex Substance(s)

Name	CAS#	ENCS	Concentration*	Symbols/Risk Phrases
ALKARYL AMINE			0.1 - 1.0%	N:R51/53
KEROSENE	8008-20-6		0.1 - 1%	R10, Xi:R38, Xn:R65, N:R51/53
ALKYL METHACRYLATE COPOLYMER			1 - 5%	Xi:R36
ALKYL THIOPHOSPHITES			0.1 - 1%	Xn:R21, C:R34, N:R50/53

* All concentrations are percent by weight unless material is a gas. Gas concentrations are in percent by volume.

JAPANESE COMPOSITION INFORMATION

Industrial Safety and Health Law: Article 57-2, Chemical substances to be notified:

Name	ISHL Ordinance Number	Concentration
KEROSENE	380	0.1-1 %weight

Product Name: TOYOTA AUTO FLUID WS
Revision Date: 08 Dec 2009
Page 2 of 12

Industrial Safety and Health Law: Article 57-2, Chemical Substances to be notified:

Name	ISHL Ordinance Number	Concentration
Mineral oil	168	80-90 %weight

PRTR Class 1 Designated Chemical Substances: None.

PRTR Class 2 Designated Chemical Substances: None.

SECTION 3	HAZARDS IDENTIFICATION
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This material is considered to be hazardous according to regulatory guidelines (see (M) SDS Section 15).

Classification: | N; R51/53 |

HEALTH HAZARDS

Low order of toxicity. Excessive exposure may result in eye, skin, or respiratory irritation.
High-pressure injection under skin may cause serious damage.

ENVIRONMENTAL HAZARDS

Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

NOTE: This material should not be used for any other purpose than the intended use in Section 1 without expert advice. Health studies have shown that chemical exposure may cause potential human health risks which may vary from person to person.

SECTION 4	FIRST AID MEASURES
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Inhalation

Remove from further exposure. For those providing assistance, avoid exposure to yourself or others.
Use adequate respiratory protection. If respiratory irritation, dizziness, nausea, or unconsciousness occurs, seek immediate medical assistance. If breathing has stopped, assist ventilation with a mechanical device or use mouth-to-mouth resuscitation.

SKIN CONTACT

Wash contact areas with soap and water. If product is injected into or under the skin, or into any part of the body, regardless of the appearance of the wound or its size, the individual should be evaluated immediately by a physician as a surgical emergency. Even though initial symptoms from high pressure injection may be minimal or absent, early surgical treatment within the first few hours may significantly reduce the ultimate extent of injury.

EYE CONTACT

Flush thoroughly with water. If irritation occurs, get medical assistance.

Product Name: TOYOTA AUTO FLUID WS
Revision Date: 08 Dec 2009
Page 3 of 12

Ingestion

First aid is normally not required. Seek medical attention if discomfort occurs.

SECTION 5	FIRE FIGHTING MEASURES
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EXTINGUISHING MEDIA

Appropriate Extinguishing Media: Use water fog, foam, dry chemical or carbon dioxide (CO₂) to extinguish flames.

Inappropriate Extinguishing Media: Straight Streams of Water

FIRE FIGHTING

Fire Fighting Instructions: Evacuate area. Prevent runoff from fire control or dilution from entering streams, sewers, or drinking water supply. Firefighters should use standard protective equipment and in enclosed spaces, self-contained breathing apparatus (SCBA). Use water spray to cool fire exposed surfaces and to protect personnel.

Hazardous Combustion Products: Smoke, Fume, Aldehydes, Sulfur Oxides, Incomplete combustion products, Oxides of carbon

FLAMMABILITY PROPERTIES

Flash Point [Method]: >175C (347F) [ASTM D-92]

Flammable Limits (Approximate volume % in air): LEL: 0.9 UEL: 7.0

Autoignition Temperature: N/D

SECTION 6	ACCIDENTAL RELEASE MEASURES
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NOTIFICATION PROCEDURES

In the event of a spill or accidental release, notify relevant authorities in accordance with all applicable regulations.

SPILL MANAGEMENT

Land Spill: Stop leak if you can do it without risk. Do not touch or walk through spilled material. Small Spills: Absorb with earth, sand or other non-combustible material and transfer to containers for later disposal. Recover by pumping or with suitable absorbent.

Water Spill: Stop leak if you can do it without risk. Confine the spill immediately with booms. Warn

Product Name: TOYOTA AUTO FLUID WS

Revision Date: 08 Dec 2009

Page 4 of 12

other shipping. Remove from the surface by skimming or with suitable absorbents. Seek the advice of a specialist before using dispersants.

Water spill and land spill recommendations are based on the most likely spill scenario for this material; however, geographic conditions, wind, temperature, (and in the case of a water spill) wave and current direction and speed may greatly influence the appropriate action to be taken. For this reason, local experts should be consulted. Note: Local regulations may prescribe or limit action to be taken.

ENVIRONMENTAL PRECAUTIONS

Large Spills: Dike far ahead of liquid spill for later recovery and disposal. Prevent entry into waterways, sewers, basements or confined areas.

SECTION 7

HANDLING AND STORAGE

HANDLING

Prevent small spills and leakage to avoid slip hazard.

Static Accumulator: This material is a static accumulator.

STORAGE

Do not store in open or unlabelled containers.

SECTION 8

EXPOSURE CONTROLS / PERSONAL PROTECTION

EXPOSURE LIMIT VALUES

Exposure limits/standards (Note: Exposure limits are not additive)

Substance Name	Form	Limit / Standard			NOTE	Source	Year
KEROSENE	Stable Aerosol.	TWA	5 mg/m ³			ExxonMobil	2009
KEROSENE	Vapor.	TWA	200 mg/m ³			ExxonMobil	2009
KEROSENE [as total hydrocarbon vapor]	Non-Aerosol	TWA	200 mg/m ³		Skin	ACGIH	2009

Exposure limits/standards for materials that can be formed when handling this product: When mists / aerosols can occur, the following are recommended: 5 mg/m³ – ACGIH TLV, 10 mg/m³ – ACGIH STEL.

NOTE: Limits/standards shown for guidance only. Follow applicable regulations.

ENGINEERING CONTROLS

The level of protection and types of controls necessary will vary depending upon potential exposure

conditions. Control measures to consider:

No special requirements under ordinary conditions of use and with adequate ventilation.

PERSONAL PROTECTION

Personal protective equipment selections vary based on potential exposure conditions such as applications, handling practices, concentration and ventilation. Information on the selection of protective equipment for use with this material, as provided below, is based upon intended, normal usage.

Respiratory Protection: If engineering controls do not maintain airborne contaminant concentrations at a level which is adequate to protect worker health, an approved respirator may be appropriate. Respirator selection, use, and maintenance must be in accordance with regulatory requirements, if applicable. Types of respirators to be considered for this material include:

No special requirements under ordinary conditions of use and with adequate ventilation.
Particulate

For high airborne concentrations, use an approved supplied-air respirator, operated in positive pressure mode. Supplied air respirators with an escape bottle may be appropriate when oxygen levels are inadequate, gas/vapor warning properties are poor, or if air purifying filter capacity/rating may be exceeded.

Hand Protection: Any specific glove information provided is based on published literature and glove manufacturer data. Glove suitability and breakthrough time will differ depending on the specific use conditions. Contact the glove manufacturer for specific advice on glove selection and breakthrough times for your use conditions. Inspect and replace worn or damaged gloves. The types of gloves to be considered for this material include:

No protection is ordinarily required under normal conditions of use. Viton, Nitrile

Eye Protection: If contact is likely, safety glasses with side shields are recommended.

Skin and Body Protection: Any specific clothing information provided is based on published literature or manufacturer data. The types of clothing to be considered for this material include:

No skin protection is ordinarily required under normal conditions of use. In accordance with good industrial hygiene practices, precautions should be taken to avoid skin contact.

Specific Hygiene Measures: Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants. Discard contaminated clothing and footwear that cannot be cleaned. Practice good housekeeping.

ENVIRONMENTAL CONTROLS

See Sections 6, 7, 12, 13.

Product Name: TOYOTA AUTO FLUID WS
Revision Date: 08 Dec 2009
Page 6 of 12

Typical physical and chemical properties are given below. Consult the Supplier in Section 1 for additional data.

GENERAL INFORMATION

Physical State: Liquid
Color: red
Odor: Characteristic
Odor Threshold: N/D

IMPORTANT HEALTH, SAFETY, AND ENVIRONMENTAL INFORMATION

Relative Density (at 15 C): 0.854
Flash Point [Method]: >175C (347F) [ASTM D-92]
Flammable Limits (Approximate volume % in air): LEL: 0.9 UEL: 7.0
Autoignition Temperature: N/D
Boiling Point / Range: > 316C (600F)
Vapor Density (Air = 1): > 2 at 101 kPa
Vapor Pressure: < 0.013 kPa (0.1 mm Hg) at 20 C
Evaporation Rate (N-Butyl Acetate = 1): N/D
pH: N/A
Log Pow (n-Octanol/Water Partition Coefficient): > 3.5
Solubility in Water: Negligible
Viscosity: 23 cSt (23 mm²/sec) at 40 C | 5.45 cSt (5.45 mm²/sec) at 100C
Oxidizing Properties: See Hazards Identification Section.

OTHER INFORMATION

Freezing Point: N/D
Melting Point: N/A
DMSO Extract (mineral oil only), IP-346: < 3 %wt

SECTION 10	STABILITY AND REACTIVITY
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STABILITY: Material is stable under normal conditions.

CONDITIONS TO AVOID: Excessive heat. High energy sources of ignition.

MATERIALS TO AVOID: Strong oxidizers

HAZARDOUS DECOMPOSITION PRODUCTS: Material does not decompose at ambient temperatures.

HAZARDOUS POLYMERIZATION: Will not occur.

SECTION 11	TOXICOLOGICAL INFORMATION
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ACUTE TOXICITY

Product Name: TOYOTA AUTO FLUID WS
Revision Date: 08 Dec 2009
Page 7 of 12

<u>Route of Exposure</u>	<u>Conclusion / Remarks</u>
Inhalation	
Toxicity (Rat): LC50 > 5000 mg/m ³	Minimally Toxic. Based on assessment of the components.
Irritation: No end point data.	Negligible hazard at ambient/normal handling temperatures. Based on assessment of the components.
Ingestion	
Toxicity (Rat): LD50 > 5000 mg/kg	Minimally Toxic. Based on test data for structurally similar materials.
Skin	
Toxicity (Rabbit): LD50 > 5000 mg/kg	Minimally Toxic. Based on test data for structurally similar materials.
Irritation (Rabbit): Data available.	Negligible irritation to skin at ambient temperatures. Based on test data for structurally similar materials.
Eye	
Irritation (Rabbit): Data available.	May cause mild, short-lasting discomfort to eyes. Based on test data for structurally similar materials.

CHRONIC/OTHER EFFECTS

Contains:

Base oil severely refined: Not carcinogenic in animal studies. Representative material passes IP-346, Modified Ames test, and/or other screening tests. Dermal and inhalation studies showed minimal effects; lung non-specific infiltration of immune cells, oil deposition and minimal granuloma formation. Not sensitizing in test animals.

Additional information is available by request.

IARC Classification:

The following ingredients are cited on the lists below: None.

—REGULATORY LISTS SEARCHED—

1 = IARC 1

2 = IARC 2A

3 = IARC 2B

SECTION 12

ECOLOGICAL INFORMATION

The information given is based on data available for the material, the components of the material, and similar materials.

ECOTOXICITY

Material -- Expected to be toxic to aquatic organisms. May cause long-term adverse effects in the aquatic environment.

Product Name: TOYOTA AUTO FLUID WS
Revision Date: 08 Dec 2009
Page 8 of 12

MOBILITY

Base oil component -- Low solubility and floats and is expected to migrate from water to the land.
Expected to partition to sediment and wastewater solids.

PERSISTENCE AND DEGRADABILITY

Biodegradation:

Base oil component -- Expected to be inherently biodegradable

BIOACCUMULATION POTENTIAL

Base oil component -- Has the potential to bioaccumulate, however metabolism or physical properties may reduce the bioconcentration or limit bioavailability.

ECOLOGICAL DATA

Component	Acute Aquatic Toxicity
ALKYL THIOPHOSPHITES	L(E)C50 >0.01 - 0.1 mg/L

SECTION 13

DISPOSAL CONSIDERATIONS

Disposal recommendations based on material as supplied. Disposal must be in accordance with current applicable laws and regulations, and material characteristics at time of disposal.

DISPOSAL RECOMMENDATIONS

Product is suitable for burning in an enclosed controlled burner for fuel value or disposal by supervised incineration at very high temperatures to prevent formation of undesirable combustion products.

SECTION 14

TRANSPORT INFORMATION

LAND - Precautionary Transportation Measures & Conditions:

Do not co-load together with dangerous substances categorized in Fire Cat. 1 and/or 6, and/or High Pressure Gases.

NOTE: Comply with applicable laws and regulations.

SEA (IMDG)

Proper Shipping Name: ENVIRONMENTALLY HAZARDOUS SUBSTANCES, LIQUID, N. O. S. (ALKYL PHOSPHITE)

Product Name: TOYOTA AUTO FLUID WS

Revision Date: 08 Dec 2009

Page 9 of 12

Hazard Class & Division: 9
UN Number: 3082
Packing Group: III
Marine Pollutant: Yes
Label(s): 9
EMS Number: F-A, S-F
Transport Document Name: UN3082, ENVIRONMENTALLY HAZARDOUS SUBSTANCES, LIQUID, N.O.S. (Alkyl phosphite), 9, PG III, MARINE POLLUTANT

AIR (IATA)

Proper Shipping Name: ENVIRONMENTALLY HAZARDOUS SUBSTANCES, LIQUID, N.O.S. (ALKYL PHOSPHITE)
Hazard Class & Division: 9
UN Number: 3082
Packing Group: III
Label(s) / Mark(s): 9, EHS
Transport Document Name: UN3082, ENVIRONMENTALLY HAZARDOUS SUBSTANCES, LIQUID, N.O.S. (Alkyl phosphite), 9, PG III

SECTION 15

REGULATORY INFORMATION

REGULATORY STATUS AND APPLICABLE LAWS AND REGULATIONS

Complies with the following national/regional chemical inventory requirements:

AICS, IECSC, DSL, ENCS, KECI, PICCS, TSCA

Special Cases:

Inventory	Status
ELINCS	Restrictions Apply

National Laws and Regulations:

Chemical Substances Control Law: Existing Chemicals - 4

Fire Service Law: Category 4, Flammable Liquids, Class III (#3 Petroleum), Water immiscible
ISHL : Notified Substances

Maritime Pollution Prevention Law: Regulated

Pollutant Release and Transfer Register (PRTR) : not applicable

Sewage Water Law: Mineral oil (5mg/l max.)

Waste Treatment Law : Controlled Industrial Waste

Water Pollution Control Law: Effluent Regulation (5mg/l max.)

Product Name: TOYOTA AUTO FLUID WS

Revision Date: 08 Dec 2009

Page 10 of 12

SECTION 16**OTHER INFORMATION**

N/D = Not determined, N/A = Not applicable

KEY TO THE RISK CODES CONTAINED IN SECTION 2 AND 3 OF THIS DOCUMENT (for information only):

R10; Flammable.

R21; Harmful in contact with skin.

R34; Causes burns.

R36; Irritating to eyes.

R38; Irritating to skin.

R50/53; Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

R51/53; Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

R65; Harmful: may cause lung damage if swallowed.

THIS SAFETY DATA SHEET CONTAINS THE FOLLOWING REVISIONS:

Revision Changes:

Composition: Component Table was modified.

Section 04: First Aid Inhalation – Header was modified.

Section 12: Ecological data – Header was added.

Section 10 Stability and Reactivity – Header was modified.

Section 13: Disposal Recommendations – Note was modified.

Section 09: Color was modified.

Section 09: Evaporation Rate – Header was modified.

Section 08: Personal Protection was modified.

Section 07: Handling and Storage – Handling was modified.

Section 11: Inhalation Lethality Test Data was modified.

Section 05: Hazardous Combustion Products was modified.

Section 06: Accidental Release – Spill Management – Land was modified.

Section 06: Accidental Release – Spill Management – Water was modified.

Section 09: Relative Density – Header was modified.

Section 09: Viscosity was modified.

Section 09: Viscosity was modified.

Hazard Identification: Classification – Header was modified.

Section 14: Proper Shipping Name – Header was added.

Section 14: Proper Shipping Name was added.

Section 14: Hazard Class & Division – Header was added.

Section 14: Hazard Class was added.

Section 14: UN Number – Header was added.

Section 14: UN Number was added.

Section 14: Packing Group – Header was added.

Section 14: Packing Group was added.

Section 14: Label(s) – Header was added.

Section 14: Label(s) was added.

Section 14: EMS Number – Header was added.

Section 14: EMS Number was added.

Section 14: Transport Document Name – Header was added.

Product Name: TOYOTA AUTO FLUID WS

Revision Date: 08 Dec 2009

Page 11 of 12

Section 14: Transport Document Name was added.
Section 14: Label(s) – Header was modified.
Section 14: Label(s) was modified.
Section 14: Marine Pollutant – Header was added.
Section 14: Marine Pollutant was added.
Section 14: Sea (IMDG) – Default was deleted.
Section 08: Exposure limits/standards was modified.
Section 14: IMO Technical Name – All was added.
Section 14: IATA Technical Name – All was modified.
Section 14: IMO Technical Name – Close parenthesis was added.
Section 14: IMO Technical Name – Open parenthesis was added.
Section 08: Hand Protection CEN Standards – AP was modified.
Section 15: Chemical Substances Law – Header was modified.
Composition: ISHL Table – Header was modified.
Section 08: Exposure Limits Table was modified.
Section 09: Oxidizing Properties was modified.
Section 08: OEL Table – Notation Column – Header was modified.
Section 08: Exposure Limit Values – Header was modified.
Section 09: Japan Flash Point C(F) was modified.
Composition: ISHL was modified.
Section 12: Environmental component tox table – Component Column – Header was added.
Section 12: Environmental component tox table – Toxicity Column – Header was added.
Section 12: Environmental component tox table was added.
Section 04: First Aid Ingestion – Header was modified.

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(AP Core)



Product Name: TOYOTA AUTO FLUID WS

Revision Date: 08 Dec 2009

Page 12 of 12

Internal Use Only

MHC: 0B, 0B, 0, 0, 0, 0

PPEC: A

DGN: 7049969XJP (1013462)
