SAFETY DATA SHEET

Conforms to Regulation (EC) No. 1907/2006 (REACH), Annex II, as amended by UK REACH Regulation SI 2019/758

MOTO BRAKE FLUID DOT 5.1

SDS no. : 32048

SECTION 1: Identification of the substance/mixture and of the company/ undertaking

1.1 Product identifier

Product name : MOTO BRAKE FLUID DOT 5.1

Product code : 32048

Product description : Not available.

Product type : Liquid.

Other means of identification : Not available.

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

Identified uses
Brake fluids. Formulation additives, lubricants and greases - Industrial General use of lubricants and greases in vehicles or machinery - Industrial General use of lubricants and greases in vehicles or machinery - Professional

Uses advised against

Not applicable.

1.3 Details of the supplier of the safety data sheet

TotalEnergies Lubrifiants
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92029 Nanterre Cedex FRANCE
Tél: +33 (0)1 41 35 40 00
Fax: +33 (0)1 41 35 84 71
rm.msds-lubs@totalenergies.com

TotalEnergies Marketing UK Limited
10 Upper Bank Street (19th floor)
Canary Wharf,
London E14 5BF
UNITED KINGDOM
Tel: +44 (0)20 7339 8000
Fax: +44 (0)20 7339 8033
rm.gb-msds@totalenergies.com

H.S.E

1.4 Emergency telephone number

National advisory body/Poison Centre

Telephone number : National Poisons Information Service (NPIS): 111

Supplier

Telephone number : Emergency telephone: +44 1235 239670

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Product definition : Mixture

Classification according to Regulation (EC) No. 1272/2008 [CLP/GHS]

Repr. 2, H361fd

The product is classified as hazardous according to UK CLP Regulation SI 2019/720 as amended.

See Section 16 for the full text of the H statements declared above.

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

2.2 Label elements

Hazard pictograms :

Signal word : Warning

Hazard statements : H361fd - Suspected of damaging fertility. Suspected of damaging the unborn child.

Precautionary statements

General : P101 - If medical advice is needed, have product container or label at hand.
P102 - Keep out of reach of children.

Prevention : P202 - Do not handle until all safety precautions have been read and understood.
P280 - Wear protective gloves, protective clothing and eye or face protection.

Response : P301 + P310 - IF SWALLOWED: Immediately call a POISON CENTER or doctor.
P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P337 + P313 - If eye irritation persists: Get medical advice or attention.

Storage : Not applicable.

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

Contains : tris[2-[2-(2-methoxyethoxy)ethoxy]ethyl] orthoborate

Supplemental label elements : Not applicable.

Annex XVII - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles : Not applicable.

2.3 Other hazards

Product meets the criteria for PBT or vPvB according to Regulation (EC) No. 1907/2006, Annex XIII

This mixture does not contain any substances that are assessed to be a PBT or a vPvB in a concentration >= 0,1 %.
This product does not contain any substance present at a concentration equal to or greater than 0.1% by mass, included in the list drawn up in accordance with article 59, paragraph 1 of the REACh Regulation, due to its endocrine disrupting properties, or a substance known to have endocrine disrupting properties in accordance with the criteria set out in Commission Delegated Regulation (EU) 2017/2100 or Commission Regulation 2018/605.

SECTION 2: Hazards identification

Other hazards which do not result in classification : Hazard of slipping on spilt product.

SECTION 3: Composition/information on ingredients

3.2 Mixtures : Mixture

Product/ingredient name	Identifiers	%	Classification	Type
tris[2-[2-(2-methoxyethoxy)ethoxy] ethyl] orthoborate	REACH #: 01-2119462824-33 EC: 250-418-4 CAS: 30989-05-0	≥75 - ≤90	Repr. 2, H361fd	[1]
2-[2-(2-butoxyethoxy)ethoxy] ethanol	REACH #: 01-2119475107-38 EC: 205-592-6 CAS: 143-22-6 Index: 603-183-00-0	≤10	Eye Dam. 1, H318	[1]
Poly(oxy-1,2-ethanediyl), α-butyl-ω-hydroxy-	REACH #: 01-2119484615-30 EC: 500-012-0 CAS: 9004-77-7	≤6.7	Eye Dam. 1, H318	[1]
2-(2-methoxyethoxy)ethanol	REACH #: 01-2119475100-52 EC: 203-906-6 CAS: 111-77-3 Index: 603-107-00-6	<3	Repr. 2, H361d **See Section 16 for the full text of the H statements declared above.**	[1] [2]

Additional information : The product is made from synthetic base oils

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, are PBTs, vPvBs or Substances of equivalent concern, or have been assigned a workplace exposure limit and hence require reporting in this section.

Type

[1] Substance classified with a health or environmental hazard
[2] Substance with a workplace exposure limit

Occupational exposure limits, if available, are listed in Section 8.

SECTION 4: First aid measures

4.1 Description of 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 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.

SECTION 4: First aid measures

Skin contact : Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Continue to rinse for at least 10 minutes. Get medical attention. Wash clothing before reuse. Clean shoes thoroughly before reuse.

Ingestion : Wash out mouth with water. Remove dentures if any. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Get medical attention. 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.

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.

4.2 Most important symptoms and effects, both acute and delayed

Over-exposure signs/symptoms

Eye contact : No specific data.

Inhalation : Adverse symptoms may include the following:
reduced foetal weight
increase in foetal deaths
skeletal malformations

Skin contact : Adverse symptoms may include the following:
reduced foetal weight
increase in foetal deaths
skeletal malformations

Ingestion : Adverse symptoms may include the following:
reduced foetal weight
increase in foetal deaths
skeletal malformations

4.3 Indication of any immediate medical attention and special treatment needed

Notes to physician : Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.

Specific treatments : No specific treatment.

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media : Use dry chemical, CO_2, water spray (fog) or foam.

Unsuitable extinguishing media : Do not use water jet.

5.2 Special hazards arising from the substance or mixture

Hazards from the substance or mixture : In a fire or if heated, a pressure increase will occur and the container may burst.

Hazardous combustion products : carbon monoxide
carbon dioxide

5.3 Advice for firefighters

SECTION 5: Firefighting measures

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

6.1 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".

6.2 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).

6.3 Methods and material for containment and cleaning up

Small spill : Stop leak if without risk. Move containers from spill area. 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. Dispose of via a licensed waste disposal contractor.

Large spill : Stop leak if without risk. Move containers from spill area. Approach the release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see Section 13). Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilt product. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

6.4 Reference to other sections

: See Section 1 for emergency contact information.
See Section 8 for information on appropriate personal protective equipment.
See Section 13 for additional waste treatment information.

SECTION 7: Handling and storage

The information in this section contains generic advice and guidance. The list of Identified Uses in Section 1 should be consulted for any available use-specific information provided in the Exposure Scenario(s).

7.1 Precautions for safe handling

Protective measures : Pregnant women should strictly avoid inhalation or skin contact.
Put on appropriate personal protective equipment (see Section 8). Avoid exposure - obtain special instructions before use. Avoid exposure during pregnancy. Do not handle until all safety precautions have been read and understood. Do not get in eyes or on skin or clothing. Do not ingest. Avoid breathing vapour or mist. If during normal use the material presents a respiratory hazard, use only with adequate ventilation or wear appropriate respirator. Keep in the original container or an

SECTION 7: Handling and storage

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.

Advice on general occupational hygiene : 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.

7.2 Conditions for safe storage, including any incompatibilities

Store between the following temperatures: 15 to 30°C (59 to 86°F). 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. Store locked up. 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.

7.3 Specific end use(s)

Recommendations : Not available.

Industrial sector specific solutions : Not available.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Occupational exposure limits

Product/substance	Exposure limit values
2-(2-methoxyethoxy)ethanol	**EH40/2005 WELs (United Kingdom (UK), 1/2020). Absorbed through skin.** TWA: 10 ppm 8 hours. TWA: 50.1 mg/m³ 8 hours.

Reportable hazardous constituent(s) contained in UVCB- and/or multi-constituent substance(s) complying with the classification criteria and/or with an exposure limit (OEL)

No exposure limit value known.

Biological Limit Values (BLV)

No exposure indices known.

Recommended monitoring procedures : 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.

Advisory OEL : No known significant effects or critical hazards.

DNELs/DMELs

SECTION 8: Exposure controls/personal protection

Product/substance	Type	Exposure	Value	Population	Effects
tris[2-[2-(2-methoxyethoxy)ethoxy] ethyl] orthoborate	DNEL	Long term Dermal	8.3 mg/kg bw/day	Workers	Systemic
	DNEL	Long term Inhalation	29.1 mg/m³	Workers	Systemic
	DNEL	Long term Dermal	4.1 mg/kg bw/day	General population	Systemic
	DNEL	Long term Inhalation	7.2 mg/m³	General population	Systemic
	DNEL	Long term Oral	4.1 mg/kg bw/day	General population	Systemic
	DNEL	Long term Oral	4.1 mg/kg bw/day	General population	Systemic
	DNEL	Long term Dermal	4.1 mg/kg bw/day	General population	Systemic
	DNEL	Long term Inhalation	7.2 mg/m³	General population	Systemic
	DNEL	Long term Dermal	8.3 mg/kg bw/day	Workers	Systemic
	DNEL	Long term Inhalation	29.1 mg/m³	Workers	Systemic
2-[2-(2-butoxyethoxy)ethoxy]ethanol	DNEL	Long term Dermal	5.65 mg/cm²	Workers	Local
	DNEL	Short term Dermal	8.35 mg/cm²	Workers	Local
	DNEL	Long term Dermal	2.823 mg/cm²	General population	Local
	DNEL	Short term Dermal	4.173 mg/cm²	General population	Local
	DNEL	Long term Dermal	2.823 mg/cm²	General population	Local
	DNEL	Short term Dermal	4.173 mg/cm²	General population	Local
	DNEL	Long term Dermal	5.65 mg/cm²	Workers	Local
	DNEL	Short term Dermal	8.35 mg/cm²	Workers	Local
	DNEL	Long term Inhalation	12 mg/m³	General population	Systemic
	DNEL	Long term Oral	12.5 mg/kg bw/day	General population	Systemic
	DNEL	Long term Inhalation	15.252 mg/m³	General population	Local
	DNEL	Long term Inhalation	24 mg/m³	Workers	Systemic
	DNEL	Long term Inhalation	30.5 mg/m³	Workers	Local
	DNEL	Short term Inhalation	48 mg/m³	General population	Local
	DNEL	Short term Inhalation	48 mg/m³	General population	Systemic
	DNEL	Short term Inhalation	96 mg/m³	Workers	Local
	DNEL	Short term Inhalation	96 mg/m³	Workers	Systemic
	DNEL	Short term Oral	103.4 mg/	General	Systemic

SECTION 8: Exposure controls/personal protection

			kg bw/day	population	
	DNEL	Long term Dermal	125 mg/kg bw/day	General population	Systemic
	DNEL	Short term Dermal	200 mg/kg bw/day	General population	Systemic
	DNEL	Long term Dermal	208 mg/kg bw/day	Workers	Systemic
	DNEL	Short term Dermal	400 mg/kg bw/day	Workers	Systemic
Poly(oxy-1,2-ethanediyl), α-butyl-ω-hydroxy-	DNEL	Long term Dermal	208 mg/kg bw/day	Workers	Systemic
	DNEL	Long term Dermal	125 mg/kg bw/day	General population	Systemic
	DNEL	Long term Oral	12.5 mg/kg bw/day	General population	Systemic
	DNEL	Long term Oral	12.5 mg/kg bw/day	General population	Systemic
	DNEL	Long term Inhalation	117 mg/m³	General population	Systemic
	DNEL	Long term Dermal	125 mg/kg bw/day	General population	Systemic
	DNEL	Long term Inhalation	195 mg/m³	Workers	Systemic
	DNEL	Long term Dermal	208 mg/kg bw/day	Workers	Systemic
2-(2-methoxyethoxy)ethanol	DNEL	Long term Dermal	1.33 mg/kg bw/day	General population	Systemic
	DNEL	Long term Dermal	2.22 mg/kg bw/day	Workers	Systemic
	DNEL	Long term Oral	7.5 mg/kg bw/day	General population	Systemic
	DNEL	Long term Inhalation	30.1 mg/m³	General population	Systemic
	DNEL	Long term Inhalation	50.1 mg/m³	Workers	Systemic

PNECs

Product/substance	Compartment Detail	Value	Method Detail
tris[2-[2-(2-methoxyethoxy)ethoxy]ethyl] orthoborate	Fresh water sediment	760 µg/kg dwt	-
	Marine water sediment	76 µg/kg dwt	-
	Soil	28.3 µg/kg dwt	-
	Sewage Treatment Plant	100 mg/l	-
	Fresh water	211.2 µg/l	-
	Marine water	21.12 µg/l	-
2-[2-(2-butoxyethoxy)ethoxy]ethanol	Fresh water	1.5 to 100 mg/l	-
	Marine water	0.15 to 142.57 mg/l	-
	Fresh water sediment	5.77 to 11.115 mg/kg dwt	-
	Marine water sediment	0.577 to 1.1115 mg/kg dwt	-
	Soil	0.35 to 11.51 mg/kg dwt	-
	Sewage Treatment	199.5 to 200 mg/l	-

SECTION 8: Exposure controls/personal protection

	Plant		
Poly(oxy-1,2-ethanediyl), α-butyl-ω-hydroxy-	Fresh water	4.5 mg/l	-
	Marine water	0.31 mg/l	-
	Fresh water sediment	6.6 mg/kg dwt	-
	Marine water sediment	0.66 mg/kg dwt	-
	Soil	1.02 mg/kg	-
	Sewage Treatment Plant	500 mg/l	-
2-(2-methoxyethoxy)ethanol	Fresh water	12 mg/l	-
	Marine water	0.12 mg/l	-
	Fresh water sediment	44.4 mg/kg dwt	-
	Marine water sediment	0.44 mg/kg dwt	-
	Soil	2.44 mg/kg dwt	-
	Sewage Treatment Plant	10000 mg/l	-

8.2 Exposure controls

Appropriate engineering controls : If user operations generate dust, fumes, gas, vapour or mist, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits.

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, EN 166.

Skin 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.

butyl 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, and the contact time.
In case of prolonged contact with the product, it is recommended to wear gloves complying with ISO 21420 and EN 374 standards, protecting at least for 480 minutes and having a thickness of 0,38 mm at least. These values are indicative only. The level of protection is provided by the material of the glove, its technical characteristics, its resistance to the chemicals to be handled, the appropriateness of its use and its replacement frequency

Body protection : Wear work clothing with long sleeves.
Protective shoes or boots.

SECTION 8: Exposure controls/personal protection

Respiratory protection : Ensure adequate ventilation and check that a safe, breathable atmosphere is present before entry into confined spaces. In case of inadequate ventilation wear respiratory protection: Type A/P2. Warning ! filters have a limited use duration. The use of breathing apparatus must comply strictly with the manufacturer's instructions and the regulations governing their choices and uses.

Environmental exposure controls : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

SECTION 9: Physical and chemical properties

The conditions of measurement of all properties are at standard temperature (20°C / 68°F) and pressure (1013 hPa) unless otherwise indicated

9.1 Information on basic physical and chemical properties

Appearance

Physical state : Liquid. [Clear]

Colour : Amber.

Odour : Mild.

Melting point/freezing point : <-50°C

Initial boiling point and boiling range : >260°C (>500°F)

Flammability (solid, gas) : Not applicable.

Upper/lower flammability or explosive limits : Not available.

Flash point : Open cup: >120°C (>248°F)

Auto-ignition temperature : >280°C (>536°F)

Decomposition temperature : 300°C

pH : 7 to 10.5

Viscosity : Kinematic: 5 to 10 mm^2/s

Solubility(ies) :

Media	Result
water	Soluble

Miscible with water : Yes.

Partition coefficient: n-octanol/water : 1.5

Vapour pressure : 0.1 kPa (0.75006 mm Hg)

Evaporation rate : 0.01 (butyl acetate = 1)

Relative density : 1.02 to 1.07

Density : 1.02 to 1.07 g/cm^3 [20°C (68°F)]

Vapour density : Not available.

Particle characteristics

Median particle size : Not applicable.

9.2 Other information

SECTION 10: Stability and reactivity

10.1 Reactivity : No specific test data related to reactivity available for this product or its ingredients.

10.2 Chemical stability : Stable under recommended storage and handling conditions (see Section 7).

10.3 Possibility of hazardous reactions : Under normal conditions of storage and use, hazardous reactions will not occur.

10.4 Conditions to avoid : Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

10.5 Incompatible materials : Strong oxidising agents

10.6 Hazardous decomposition products : carbon monoxide
carbon dioxide

SECTION 11: Toxicological information

11.1 Information on hazard classes as defined in Regulation (EC) No 1272/2008

Acute toxicity

Product/substance	Result	Species	Dose	Exposure	Test
tris[2-[2-(2-methoxyethoxy) ethoxy]ethyl] orthoborate	LD50 Dermal	Rat	>2000 mg/kg	-	402
	LD50 Oral	Rat	>2000 mg/kg	-	401
2-[2-(2-butoxyethoxy)ethoxy] ethanol	LD50 Dermal	Rabbit	3480 mg/kg	-	-
	LD50 Oral	Rat	5300 mg/kg	-	-
Poly(oxy-1,2-ethanediyl), α-butyl-ω-hydroxy-	LD50 Dermal	Rabbit	3540 mg/kg	-	-
	LD50 Oral	Rat	2630 mg/kg	-	-
2-(2-methoxyethoxy)ethanol	LD50 Dermal	Rabbit	9404 mg/kg	-	OECD 402
	LD50 Oral	Rat	7128 mg/kg	-	OECD 401

Acute toxicity estimates

Product/substance	Oral (mg/kg)	Dermal (mg/kg)	Inhalation (gases) (ppm)	Inhalation (vapours) (mg/l)	Inhalation (dusts and mists) (mg/l)
2-[2-(2-butoxyethoxy)ethoxy]ethanol	5300	3480	N/A	N/A	5.1
Poly(oxy-1,2-ethanediyl), α-butyl-ω-hydroxy-	2630	3540	N/A	N/A	N/A
2-(2-methoxyethoxy)ethanol	7128	9404	N/A	20.1	N/A

Conclusion/Summary : Based on available data, the classification criteria are not met.

Irritation/Corrosion

Product/substance	Result	Species	Score	Exposure	Test
2-[2-(2-butoxyethoxy)ethoxy] ethanol	Eyes - Moderate irritant	Rabbit	-	24 hours 20 mg	-
	Eyes - Severe irritant	Rabbit	-	50 mg	-
	Skin - Mild irritant	Rabbit	-	24 hours 500 mg	-

Conclusion/Summary

SECTION 11: Toxicological information

Skin : Based on available data, the classification criteria are not met.

Eyes : Based on available data, the classification criteria are not met.

Respiratory : Based on available data, the classification criteria are not met.

Sensitisation

Conclusion/Summary :

Skin : Based on available data, the classification criteria are not met.

Respiratory : Based on available data, the classification criteria are not met.

Mutagenicity

Conclusion/Summary : Based on available data, the classification criteria are not met.

Carcinogenicity

Conclusion/Summary : Based on available data, the classification criteria are not met.

Reproductive toxicity

Conclusion/Summary : Based on available data, the classification criteria are met.

Teratogenicity

Conclusion/Summary : Based on available data, the classification criteria are met.

Specific target organ toxicity (single exposure)

Not available.

Conclusion/Summary : Based on available data, the classification criteria are not met.

Specific target organ toxicity (repeated exposure)

Not available.

Conclusion/Summary : Based on available data, the classification criteria are not met.

Aspiration hazard

Not available.

Conclusion/Summary : Based on available data, the classification criteria are not met.

Information on likely routes of exposure : 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

Eye contact : No specific data.

Inhalation : Adverse symptoms may include the following:
reduced foetal weight
increase in foetal deaths
skeletal malformations

Skin contact : Adverse symptoms may include the following:
reduced foetal weight
increase in foetal deaths
skeletal malformations

SECTION 11: Toxicological information

Ingestion : 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

Short term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Long term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Potential chronic health effects

Not available.

Conclusion/Summary : Not available.

General : No known significant effects or critical hazards.

Carcinogenicity : No known significant effects or critical hazards.

Mutagenicity : No known significant effects or critical hazards.

Reproductive toxicity : Suspected of damaging fertility. Suspected of damaging the unborn child.

11.2 Information on other hazards

11.2.1 Endocrine disrupting properties

This product does not contain any substance present at a concentration equal to or greater than 0.1% by mass, included in the list drawn up in accordance with article 59, paragraph 1 of the REACh Regulation, due to its endocrine disrupting properties, or a substance known to have endocrine disrupting properties in accordance with the criteria set out in Commission Delegated Regulation (EU) 2017/2100 or Commission Regulation 2018/605.

11.2.2 Other information

Not available.

SECTION 12: Ecological information

12.1 Toxicity

Product/substance	Result	Species	Exposure	Test
Tris[2-[2-(2-methoxyethoxy) ethoxy]ethyl] orthoborate	Acute EC50 >224 mg/l	Algae - *Pseudokirchneriella subcapitata*	72 hours	201
	Acute EC50 >211 mg/l	Crustaceans - *Daphnia magna*	48 hours	202
	Acute LC50 >222.2 mg/l	Fish - *Oncorhynchus mykiss*	96 hours	203
	Chronic NOEC >224 mg/l	Algae	72 hours	OECD 201
2-[2-(2-butoxyethoxy)ethoxy] ethanol	Acute EC50 500 mg/l	Algae - *Desmodesmus subspicatus*	72 hours	-
	Acute EC50 500 mg/l	Daphnia - *Daphnia magna*	48 hours	-
	Acute LC50 2182 mg/l	Fish	96 hours	-
Poly(oxy-1,2-ethanediyl), α-butyl-ω-hydroxy-	Acute EC50 2490 mg/l	Algae - *Scenedesmus capricornutum*	72 hours	OECD 201

SECTION 12: Ecological information

2-(2-methoxyethoxy)ethanol	Acute EC50 3200 mg/l Acute LC50 1800 mg/l Acute EC50 >1000 mg/l Acute EC50 1192 mg/l Acute EC50 5741 mg/l Acute EC50 >10000 mg/l	Daphnia - *Daphnia magna* Fish Algae - *Pseudokirchnerella subcapitata* Daphnia - *Daphnia magna* Fish Micro-organism	48 hours 96 hours 96 hours 48 hours 96 hours 17 hours	OECD 202 - OECD 201 - - -

Conclusion/Summary : Not available.

12.2 Persistence and degradability

Product/substance	Test	Result	Dose	Inoculum
tris[2-[2-(2-methoxyethoxy) ethoxy]ethyl] orthoborate	OECD 301A	>70 % - Readily - 10 days	-	Activated sludge

Conclusion/Summary : Not available.

Product/substance	Aquatic half-life	Photolysis	Biodegradability
MOTO BRAKE FLUID DOT 5.1	-	-	Readily
tris[2-[2-(2-methoxyethoxy) ethoxy]ethyl] orthoborate	-	-	Readily
2-[2-(2-butoxyethoxy)ethoxy] ethanol	-	-	Readily
2-(2-methoxyethoxy)ethanol	-	-	Readily

12.3 Bioaccumulative potential

Product/substance	$LogP_{ow}$	BCF	Potential
MOTO BRAKE FLUID DOT 5.1	1.5	-	Low
tris[2-[2-(2-methoxyethoxy) ethoxy]ethyl] orthoborate	1	-	Low
2-[2-(2-butoxyethoxy)ethoxy] ethanol	0.51	-	Low
Poly(oxy-1,2-ethanediyl), α-butyl-ω-hydroxy-	0.436	-	Low
2-(2-methoxyethoxy)ethanol	-0.47	-	Low

12.4 Mobility in soil

Soil/water partition coefficient (K_{OC}) : Not available.

Mobility : Not available.

Mobility in soil : Given its physical and chemical characteristics, the product is generally mobile in the ground Loss by evaporation is limited Soluble in water

12.5 Results of PBT and vPvB assessment

This mixture does not contain any substances that are assessed to be a PBT or a vPvB in a concentration >= 0,1 %.

12.6 Endocrine disrupting properties

SECTION 12: Ecological information

This product does not contain any substance present at a concentration equal to or greater than 0.1% by mass, included in the list drawn up in accordance with article 59, paragraph 1 of the REACh Regulation, due to its endocrine disrupting properties, or a substance known to have endocrine disrupting properties in accordance with the criteria set out in Commission Delegated Regulation (EU) 2017/2100 or Commission Regulation 2018/605.

12.7 Other adverse effects

No known significant effects or critical hazards.

SECTION 13: Disposal considerations

The information in this section contains generic advice and guidance. The list of Identified Uses in Section 1 should be consulted for any available use-specific information provided in the Exposure Scenario(s).

13.1 Waste treatment methods

Product

Methods of disposal : 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.

Hazardous waste : Yes.

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. The following Waste Codes are only suggestions: 16 01 13*

Packaging

Methods of disposal : The generation of waste should be avoided or minimised wherever possible. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible.

Special precautions : 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	ICAO/IATA
14.1 UN number or ID number	Not regulated.	Not regulated.	Not regulated.	Not regulated.
14.2 UN proper shipping name	-	-	-	-
14.3 Transport hazard class(es)	-	-	-	-
14.4 Packing group	-	-	-	-

SECTION 14: Transport information

14.5 Environmental hazards	No.	No.	No.	No.

14.6 Special precautions for user : **Transport within user's premises:** always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

14.7 Maritime transport in bulk according to IMO instruments : Not available.

SECTION 15: Regulatory information

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

UK (GB)/REACH

Annex XIV - List of substances subject to authorisation

Annex XIV

None of the components are listed.

Substances of very high concern

None of the components are listed.

Ozone depleting substances

Not listed.

Prior Informed Consent (PIC)

Not listed.

Persistent Organic Pollutants

Not listed.

Annex XVII - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles

Seveso Directive

This product is not controlled under the Seveso Directive.

EU regulations

Take note of Dir 92/85/EC on the protection of pregnant and breastfeeding women at work
Take note of Directive 98/24/EC on the protection of the health and safety of workers from the risks related to chemical agents at work.

Industrial emissions (integrated pollution prevention and control) - Air : Not listed

Industrial emissions (integrated pollution prevention and control) - Water : Not listed

International regulations

Chemical Weapon Convention List Schedules I, II & III Chemicals

SECTION 15: Regulatory information

Not listed.

Montreal Protocol

Not listed.

Stockholm Convention on Persistent Organic Pollutants

Not listed.

Rotterdam Convention on Prior Informed Consent (PIC)

Not listed.

UNECE Aarhus Protocol on POPs and Heavy Metals

Not listed.

Inventory list

Australia inventory (AIIC)	:	All components are listed or exempted.
Canada inventory	:	All components are listed or exempted.
China inventory (IECSC)	:	All components are listed or exempted.
Europe inventory	:	All components are listed or exempted.
Japan inventory	:	**Japan inventory (CSCL)**: All components are listed or exempted. **Japan inventory (ISHL)**: Not determined.
New Zealand Inventory of Chemicals (NZIoC)	:	All components are listed or exempted.
Philippines inventory (PICCS)	:	All components are listed or exempted.
Korea inventory (KECI)	:	All components are listed or exempted.
Taiwan Chemical Substances Inventory (TCSI)	:	All components are listed or exempted.
Thailand inventory	:	Not determined.
Turkey inventory	:	Not determined.
United States inventory (TSCA 8b)	:	All components are listed or exempted.
Vietnam inventory	:	Not determined.

The information stated in this section relates solely to the conformity of the chemical product with the countries Inventories. The information used to confirm the inventory status of this product may be based on additional data to the chemical composition shown in Section 3. Other regulations may apply for importation or marketing authorizations.

15.2 Chemical safety assessment : Risk management measures and safety conditions of use are included in the relevant sections of the SDS

SECTION 16: Other information

Indicates information that has changed from previously issued version.

Abbreviations and acronyms : ATE = Acute Toxicity Estimate
CLP = Classification, Labelling and Packaging Regulation [Regulation (EC) No. 1272/2008]
DNEL = Derived No Effect Level
DMEL = Derived Minimal Effect Level
EUH statement = CLP-specific Hazard statement
N/A = Not available
PBT = Persistent, Bioaccumulative and Toxic
vPvB = Very Persistent and Very Bioaccumulative

SECTION 16: Other information

PNEC = Predicted No Effect Concentration
LC50 = Median lethal concentration
LD50 = Median lethal dose
OEL = Occupational Exposure Limit
VOC = Volatile Organic Compound
UVCB Substance of unknown or Variable composition, Complex reaction products or Biological material
NOEC No Observed Effect Concentration
QSAR = Quantitative Structure–Activity Relationship

Procedure used to derive the classification

Classification	Justification
Repr. 2, H361fd	Calculation method

Full text of abbreviated H statements

H318	Causes serious eye damage.
H361d	Suspected of damaging the unborn child.
H361fd	Suspected of damaging fertility. Suspected of damaging the unborn child.

Full text of classifications

Eye Dam. 1	SERIOUS EYE DAMAGE/EYE IRRITATION - Category 1
Repr. 2	REPRODUCTIVE TOXICITY - Category 2

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Version : 4

Notice to reader

To the best of our knowledge, the information contained herein is accurate. However, neither the above-named supplier, nor any of its subsidiaries, assumes any liability whatsoever for the accuracy or completeness of the information contained herein.
Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.

Annex to the extended Safety Data Sheet (eSDS)

Industrial

Identification of the substance or mixture

Product definition : Mixture

Code : 32048

Product name : MOTO BRAKE FLUID DOT 5.1

Section 1 - Title

Short title of the exposure scenario : Formulation additives, lubricants and greases - Industrial

List of use descriptors : **Identified use name:** Formulation additives, lubricants and greases - Industrial
Process Category: PROC01, PROC02, PROC03, PROC04, PROC05, PROC08a, PROC08b, PROC09, PROC15
Sector of end use: SU03, SU10
Subsequent service life relevant for that use: No.
Environmental Release Category: ERC02

Health Contributing scenarios : **General measures applicable to all activities**
General exposures Use in contained systems Elevated temperature - PROC02
Mixing operations Closed systems Batch processes at elevated temperatures - PROC03
Mixing operations Open systems Batch processes at elevated temperatures - PROC04, PROC05
Mixing operations (open systems) - PROC04, PROC05
Process sampling - PROC04, PROC08b
Bulk transfers Dedicated facility - PROC08b
Drum/batch transfers Dedicated facility - PROC08b
Drum/batch transfers Non-dedicated facility - PROC08a
Equipment cleaning and maintenance - PROC08a, PROC08b
Drum and small package filling - PROC09
Laboratory activities - PROC15
Storage - PROC01, PROC02

Processes and activities covered by the exposure scenario : Industrial formulation of lubricant additives, lubricants and greases. Includes material transfers, mixing, large and small scale packing, sampling, maintenance.

Section 2 - Exposure controls

Contributing scenario controlling environmental exposure for 1:

No exposure scenario required

Contributing scenario controlling worker exposure for 2: General measures applicable to all activities

Concentration of substance in mixture or article : Covers percentage substance in the product up to 100 %. (unless stated differently)

Physical state : Liquid, vapour pressure < 0.5 kPa at Standard Temperature and Pressure

Amounts used : Not applicable.

Frequency and duration of use/exposure : Covers daily exposures up to 8 hours (unless stated differently)

Human factors not influenced by risk management : Not applicable.

Other conditions affecting workers exposure : Covers percentage substance in the product up to 100% (unless stated differently)

Conditions and measures related to personal protection, hygiene and health evaluation

Advice on general occupational hygiene : Avoid direct skin contact with product. Identify potential areas for indirect skin contact. Wear gloves (tested to EN 374) if hand contact with substance likely. Clean up contamination/spills as soon as they occur. Wash off any skin contamination immediately. Provide basic employee training to prevent/minimise exposures and to report any skin problems that may develop. Avoid direct eye contact with product, also via contamination on hands.

Personal protection : Use suitable eye protection.

Contributing scenario controlling worker exposure for 3: General exposures Use in contained systems Elevated temperature

No other specific measures identified.

Contributing scenario controlling worker exposure for 4: Mixing operations Closed systems Batch processes at elevated temperatures

Ventilation control measures : Provide extract ventilation to points where emissions occur.

Contributing scenario controlling worker exposure for 5: Mixing operations Open systems Batch processes at elevated temperatures

Frequency and duration of use/exposure : Avoid carrying out activities involving exposure for more than 4 hours per day.

Ventilation control measures : Provide extract ventilation to points where emissions occur.

Contributing scenario controlling worker exposure for 6: Mixing operations (open systems)

Ventilation control measures : Provide extract ventilation to points where emissions occur.

Contributing scenario controlling worker exposure for 7: Process sampling

Frequency and duration of use/exposure : Avoid carrying out activities involving exposure for more than 1 hour per day.

Conditions and measures related to personal protection, hygiene and health evaluation

Personal protection : Wear chemical-resistant gloves (tested to EN374) in combination with specific activity training.

Contributing scenario controlling worker exposure for 8: Bulk transfers Dedicated facility

Frequency and duration of use/exposure : Avoid carrying out activities involving exposure for more than 4 hours per day.

Conditions and measures related to personal protection, hygiene and health evaluation

Personal protection : Wear chemical-resistant gloves (tested to EN374) in combination with intensive management supervision controls.

Respiratory protection : Wear a respirator conforming to EN140 with type A filter or better. Effectiveness: 90%

Contributing scenario controlling worker exposure for 9: Drum/batch transfers Dedicated facility

Ventilation control measures : Provide extract ventilation to points where emissions occur.

Contributing scenario controlling worker exposure for 10: Drum/batch transfers Non-dedicated facility

Frequency and duration of use/exposure : Avoid carrying out activities involving exposure for more than 1 hour per day.

Ventilation control measures : Provide a good standard of general or controlled ventilation (10 to 15 air changes per hour).

Conditions and measures related to personal protection, hygiene and health evaluation

Personal protection : Wear chemical-resistant gloves (tested to EN374) in combination with intensive management supervision controls.

Contributing scenario controlling worker exposure for 11: Equipment cleaning and maintenance

Technical conditions and measures to control dispersion from source towards the worker : Retain drain-downs in sealed storage pending disposal or for subsequent recycle.

Engineering controls : Drain down and flush system prior to equipment break-in or maintenance.

Conditions and measures related to personal protection, hygiene and health evaluation

Advice on general occupational hygiene : Clear spills immediately.

Personal protection : Wear chemical-resistant gloves (tested to EN374) in combination with intensive management supervision controls.

Respiratory protection : Wear a respirator conforming to EN140 with type A filter or better. Effectiveness: 90%

Contributing scenario controlling worker exposure for 12: Drum and small package filling

Ventilation control measures : Provide a good standard of general or controlled ventilation (10 to 15 air changes per hour).

Conditions and measures related to personal protection, hygiene and health evaluation

Personal protection : Wear chemical-resistant gloves (tested to EN374) in combination with specific activity training.

Respiratory protection : Wear a respirator conforming to EN140 with type A filter or better. Effectiveness: 90%

Contributing scenario controlling worker exposure for 13: Laboratory activities

Frequency and duration of use/exposure : Avoid carrying out activities involving exposure for more than 4 hours per day.

Conditions and measures related to personal protection, hygiene and health evaluation

Respiratory protection : Wear a respirator conforming to EN140 with type A filter or better. Effectiveness: 90%

Contributing scenario controlling worker exposure for 14: Storage

Engineering controls : Store substance within a closed system.

Section 3 - Exposure estimation and reference to its source

Website: : Not applicable.

Exposure estimation and reference to its source - Environment: 1:

Exposure assessment (environment): : Used ECETOC TRA model.

Exposure estimation and reference to its source : Not available.

Exposure estimation and reference to its source - Workers: 2: General measures applicable to all activities

Exposure assessment (human): : The risk Management Mesures/Operational Conditions that are identified in the Exposure Scenario are the outcome of a quantitative and qualitative assessment that covers this product.

Exposure estimation and reference to its source : Not available.

Exposure estimation and reference to its source - Workers: 3: General exposures Use in contained systems Elevated temperature

Exposure assessment (human): : The risk Management Mesures/Operational Conditions that are identified in the Exposure Scenario are the outcome of a quantitative and qualitative assessment that covers this product.

Exposure estimation and reference to its source : Not available.

Exposure estimation and reference to its source - Workers: 4: Mixing operations Closed systems Batch processes at elevated temperatures

Exposure assessment (human): : The risk Management Mesures/Operational Conditions that are identified in the Exposure Scenario are the outcome of a quantitative and qualitative assessment that covers this product.

Exposure estimation and reference to its source : Not available.

Exposure estimation and reference to its source - Workers: 5: Mixing operations Open systems Batch processes at elevated temperatures

Exposure assessment (human): : The risk Management Mesures/Operational Conditions that are identified in the Exposure Scenario are the outcome of a quantitative and qualitative assessment that covers this product.

Exposure estimation and reference to its source : Not available.

Exposure estimation and reference to its source - Workers: 6: Mixing operations (open systems)

Exposure assessment (human): : The risk Management Mesures/Operational Conditions that are identified in the Exposure Scenario are the outcome of a quantitative and qualitative assessment that covers this product.

Exposure estimation and reference to its source : Not available.

Exposure estimation and reference to its source - Workers: 7: Process sampling

Exposure assessment (human): : The risk Management Mesures/Operational Conditions that are identified in the Exposure Scenario are the outcome of a quantitative and qualitative assessment that covers this product.

Exposure estimation and reference to its source : Not available.

Exposure estimation and reference to its source - Workers: 8: Bulk transfers Dedicated facility

Exposure assessment (human): : The risk Management Mesures/Operational Conditions that are identified in the Exposure Scenario are the outcome of a quantitative and qualitative assessment that covers this product.

Exposure estimation and reference to its source : Not available.

Exposure estimation and reference to its source - Workers: 9: Drum/batch transfers Dedicated facility

Exposure assessment (human): : The risk Management Mesures/Operational Conditions that are identified in the Exposure Scenario are the outcome of a quantitative and qualitative assessment that covers this product.

Exposure estimation and reference to its source : Not available.

Exposure estimation and reference to its source - Workers: 10: Drum/batch transfers Non-dedicated facility

Exposure assessment (human): : The risk Management Mesures/Operational Conditions that are identified in the Exposure Scenario are the outcome of a quantitative and qualitative assessment that covers this product.

Exposure estimation and reference to its source : Not available.

Exposure estimation and reference to its source - Workers: 11: Equipment cleaning and maintenance

Exposure assessment (human): : The risk Management Mesures/Operational Conditions that are identified in the Exposure Scenario are the outcome of a quantitative and qualitative assessment that covers this product.

Exposure estimation and reference to its source : Not available.

Exposure estimation and reference to its source - Workers: 12: Drum and small package filling

Exposure assessment (human):	:	The risk Management Mesures/Operational Conditions that are identified in the Exposure Scenario are the outcome of a quantitative and qualitative assessment that covers this product.
Exposure estimation and reference to its source	:	Not available.

Exposure estimation and reference to its source - Workers: 13: Laboratory activities

Exposure assessment (human):	:	The risk Management Mesures/Operational Conditions that are identified in the Exposure Scenario are the outcome of a quantitative and qualitative assessment that covers this product.
Exposure estimation and reference to its source	:	Not available.

Exposure estimation and reference to its source - Workers: 14: Storage

Exposure assessment (human):	:	The risk Management Mesures/Operational Conditions that are identified in the Exposure Scenario are the outcome of a quantitative and qualitative assessment that covers this product.
Exposure estimation and reference to its source	:	Not available.

Section 4 - Guidance to DU to evaluate whether he works inside the boundaries set by the ES

Environment	:	Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures. Further details on scaling and control technologies are provided in SPERC factsheet. If scaling reveals a condition of unsafe use (i.e., RCRs > 1), additional RMMs or a site-specific chemical safety assessment is required. For further information see www.atiel.org/reach/introduction.
Health	:	Where other risk management measures/operational conditions are adopted, then users should ensure that risks are managed to at least equivalent levels. For further information see www.atiel.org/reach/introduction.

Additional good practice advice beyond the REACH CSA

Environment	:	Not available.
Health	:	Not available.

Annex to the extended Safety Data Sheet (eSDS)

Industrial

Identification of the substance or mixture

Product definition : Mixture

Code : 32048

Product name : MOTO BRAKE FLUID DOT 5.1

Section 1 - Title

Short title of the exposure scenario : General use of lubricants and greases in vehicles or machinery - Industrial

List of use descriptors : **Identified use name:** General use of lubricants and greases in vehicles or machinery - Industrial
Process Category: PROC01, PROC02, PROC08b, PROC09
Sector of end use: SU03
Subsequent service life relevant for that use: No.
Environmental Release Category: ERC04, ERC07

Health Contributing scenarios : **General measures applicable to all activities**
General exposures (closed systems) - PROC01
Initial factory fill of equipment Use in contained systems - PROC02, PROC09
Initial factory fill of equipment Open systems - PROC08b
Operation of equipment containing engine oils and similar Use in contained systems - PROC01
Equipment cleaning and maintenance - PROC08b
Equipment cleaning and maintenance Operation is carried out at elevated temperature (> 20°C above ambient temperature) - PROC08b
Storage - PROC01, PROC02

Processes and activities covered by the exposure scenario : Covers general use of lubricants and greases in vehiculs or machinery in closed systems. Includes filling and draining of containers and operation of enclosed machinery (including engines) and associated maintenance and storage activities.

Section 2 - Exposure controls

Contributing scenario controlling environmental exposure for 1:

No exposure scenario required

Contributing scenario controlling worker exposure for 2: General measures applicable to all activities

Concentration of substance in mixture or article : Covers percentage substance in the product up to 100% (unless stated differently).

Physical state : Liquid, vapour pressure < 0.5 kPa at Standard Temperature and Pressure.

Frequency and duration of use/exposure : Covers daily exposures up to 8 hours (unless stated differently).

Other conditions affecting workers exposure : Assumes use at not more than 20°C above ambient temperature. unless stated differently.
Assumes a good basic standard of occupational hygiene has been implemented.

Conditions and measures related to personal protection, hygiene and health evaluation

Advice on general occupational hygiene : Avoid direct skin contact with product. Identify potential areas for indirect skin contact. Wear gloves (tested to EN 374) if hand contact with substance likely. Clean up contamination/spills as soon as they occur. Wash off any skin contamination immediately. Provide basic employee training to prevent/minimise exposures and to report any skin problems that may develop. Avoid direct eye contact with product, also via contamination on hands.

Personal protection : Use suitable eye protection.

Contributing scenario controlling worker exposure for 3: General exposures (closed systems)

No other specific measures identified.

Contributing scenario controlling worker exposure for 4: Initial factory fill of equipment Use in contained systems

Conditions and measures related to personal protection, hygiene and health evaluation

Respiratory protection : Wear a respirator conforming to EN140 with type A filter or better. Effectiveness: 90%

Contributing scenario controlling worker exposure for 5: Initial factory fill of equipment Open systems

Frequency and duration of use/exposure : Avoid carrying out activities involving exposure for more than 4 hours per day.

Ventilation control measures : Provide a good standard of general or controlled ventilation (10 to 15 air changes per hour)

Contributing scenario controlling worker exposure for 6: Operation of equipment containing engine oils and similar Use in contained systems

No other specific measures identified.

Contributing scenario controlling worker exposure for 7: Equipment cleaning and maintenance

Technical conditions and measures at process level (source) to prevent release : Retain drain-downs in sealed storage pending disposal or for subsequent recycle.

Engineering controls : Drain down system prior to equipment break-in or maintenance.

Ventilation control measures : Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour).

Conditions and measures related to personal protection, hygiene and health evaluation

Personal protection : Wear chemical-resistant gloves (tested to EN374) in combination with specific activity training.

Respiratory protection : Wear a respirator conforming to EN140 with type A filter or better. Effectiveness: 90%

Contributing scenario controlling worker exposure for 8: Equipment cleaning and maintenance Operation is carried out at elevated temperature (> 20°C above ambient temperature)

Technical conditions and measures to control dispersion from source towards the worker : Retain drain-downs in sealed storage pending disposal or for subsequent recycle.

Engineering controls : Drain down system prior to equipment break-in or maintenance.

Ventilation control measures : Provide extract ventilation to emission points when contact with warm (>50°C) lubricant is likely.

Conditions and measures related to personal protection, hygiene and health evaluation

Personal protection : Wear chemical-resistant gloves (tested to EN374) in combination with intensive management supervision controls.

Contributing scenario controlling worker exposure for 9: Storage

Engineering controls : Store substance within a closed system.

Section 3 - Exposure estimation and reference to its source

Website: : Not applicable.

Exposure estimation and reference to its source - Environment: 1:

Exposure assessment (environment): : Used ECETOC TRA model.

Exposure estimation and reference to its source : Not available.

Exposure estimation and reference to its source - Workers: 2: General measures applicable to all activities

Exposure assessment (human): : The risk Management Mesures/Operational Conditions that are identified in the Exposure Scenario are the outcome of a quantitative and qualitative assessment that covers this product.

Exposure estimation and reference to its source : Not available.

Exposure estimation and reference to its source - Workers: 3: General exposures (closed systems)

Exposure assessment (human): : The risk Management Mesures/Operational Conditions that are identified in the Exposure Scenario are the outcome of a quantitative and qualitative assessment that covers this product.

Exposure estimation and reference to its source : Not available.

Exposure estimation and reference to its source - Workers: 4: Initial factory fill of equipment Use in contained systems

Exposure assessment (human): : The risk Management Mesures/Operational Conditions that are identified in the Exposure Scenario are the outcome of a quantitative and qualitative assessment that covers this product.

Exposure estimation and reference to its source : Not available.

Exposure estimation and reference to its source - Workers: 5: Initial factory fill of equipment Open systems

Exposure assessment (human): : The risk Management Mesures/Operational Conditions that are identified in the Exposure Scenario are the outcome of a quantitative and qualitative assessment that covers this product.

Exposure estimation and reference to its source : Not available.

Exposure estimation and reference to its source - Workers: 6: Operation of equipment containing engine oils and similar Use in contained systems

Exposure assessment (human): : The risk Management Mesures/Operational Conditions that are identified in the Exposure Scenario are the outcome of a quantitative and qualitative assessment that covers this product.

Exposure estimation and reference to its source : Not available.

Exposure estimation and reference to its source - Workers: 7: Equipment cleaning and maintenance

Exposure assessment (human): : The risk Management Mesures/Operational Conditions that are identified in the Exposure Scenario are the outcome of a quantitative and qualitative assessment that covers this product.

Exposure estimation and reference to its source : Not available.

Exposure estimation and reference to its source - Workers: 8: Equipment cleaning and maintenance Operation is carried out at elevated temperature (> 20°C above ambient temperature)

Exposure assessment (human): : The risk Management Mesures/Operational Conditions that are identified in the Exposure Scenario are the outcome of a quantitative and qualitative assessment that covers this product.

Exposure estimation and reference to its source : Not available.

Exposure estimation and reference to its source - Workers: 9: Storage

Exposure assessment (human): : The risk Management Mesures/Operational Conditions that are identified in the Exposure Scenario are the outcome of a quantitative and qualitative assessment that covers this product.

Exposure estimation and reference to its source : Not available.

Section 4 - Guidance to DU to evaluate whether he works inside the boundaries set by the ES

Environment	:	Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures. Further details on scaling and control technologies are provided in SPERC factsheet. If scaling reveals a condition of unsafe use (i.e., RCRs > 1), additional RMMs or a site-specific chemical safety assessment is required. For further information see www.atiel.org/reach/introduction.
Health	:	Where other risk management measures/operational conditions are adopted, then users should ensure that risks are managed to at least equivalent levels. For further information see www.atiel.org/reach/introduction.

Additional good practice advice beyond the REACH CSA

Environment	:	Not available.
Health	:	Not available.

Annex to the extended Safety Data Sheet (eSDS)

Professional

Identification of the substance or mixture

Product definition : Mixture

Code : 32048

Product name : MOTO BRAKE FLUID DOT 5.1

Section 1 - Title

Short title of the exposure scenario : General use of lubricants and greases in vehicles or machinery - Professional

List of use descriptors : **Identified use name:** General use of lubricants and greases in vehicles or machinery - Professional
Process Category: PROC01, PROC02, PROC08a, PROC08b, PROC20
Sector of end use: SU22
Subsequent service life relevant for that use: No.
Environmental Release Category: ERC09a, ERC09b

Health Contributing scenarios : **General measures applicable to all activities**
Operation of equipment containing engine oils and similar Use in contained systems - PROC01
Material transfers Non-dedicated facility - PROC08a
Equipment cleaning and maintenance Dedicated facility - PROC08b, PROC20
Storage - PROC01, PROC02

Processes and activities covered by the exposure scenario : Covers general use of lubricants and greases in vehiculs or machinery in closed systems. Includes filling and draining of containers and operation of enclosed machinery (including engines) and associated maintenance and storage activities.

Section 2 - Exposure controls

Contributing scenario controlling environmental exposure for 1:

No exposure scenario required

Contributing scenario controlling worker exposure for 2: General measures applicable to all activities

Concentration of substance in mixture or article : Covers percentage substance in the product up to 100% (unless stated differently).

Physical state : Liquid, vapour pressure < 0.5 kPa at Standard Temperature and Pressure.

Frequency and duration of use/exposure : Covers daily exposures up to 8 hours (unless stated differently).

Other conditions affecting workers exposure : Assumes use at not more than 20°C above ambient temperature. unless stated differently.
Assumes a good basic standard of occupational hygiene has been implemented.

Conditions and measures related to personal protection, hygiene and health evaluation

Advice on general occupational hygiene : Avoid direct skin contact with product. Identify potential areas for indirect skin contact. Wear gloves (tested to EN 374) if hand contact with substance likely. Clean up contamination/spills as soon as they occur. Wash off any skin contamination immediately. Provide basic employee training to prevent/minimise exposures and to report any skin problems that may develop. Avoid direct eye contact with product, also via contamination on hands.

Personal protection : Use suitable eye protection.

Contributing scenario controlling worker exposure for 3: Operation of equipment containing engine oils and similar Use in contained systems

No other specific measures identified.

Contributing scenario controlling worker exposure for 4: Material transfers Non-dedicated facility

Frequency and duration of use/exposure : Avoid carrying out activities involving exposure for more than 4 hours per day.

Conditions and measures related to personal protection, hygiene and health evaluation

Personal protection : Wear chemical-resistant gloves (tested to EN374) in combination with specific activity training.

Respiratory protection : Wear a respirator conforming to EN140 with type A/P2 filter or better. Effectiveness: 95%

Contributing scenario controlling worker exposure for 5: Equipment cleaning and maintenance Dedicated facility

Technical conditions and measures at process level (source) to prevent release : Retain drain-downs in sealed storage pending disposal or for subsequent recycle.

Engineering controls : Drain down system prior to equipment break-in or maintenance.

Conditions and measures related to personal protection, hygiene and health evaluation

Respiratory protection : Wear a respirator conforming to EN140 with type A filter or better. Effectiveness: 90%

Contributing scenario controlling worker exposure for 6: Storage

Engineering controls : Store substance within a closed system.

Conditions and measures related to personal protection, hygiene and health evaluation

Respiratory protection : Wear a respirator conforming to EN140 with type A filter or better. Effectiveness: 90%

Section 3 - Exposure estimation and reference to its source

Website: : Not applicable.

Exposure estimation and reference to its source - Environment: 1:

Exposure assessment (environment): : Used ECETOC TRA model.

Exposure estimation and reference to its source : Not available.

Exposure estimation and reference to its source - Workers: 2: General measures applicable to all activities

Exposure assessment (human): : The risk Management Mesures/Operational Conditions that are identified in the Exposure Scenario are the outcome of a quantitative and qualitative assessment that covers this product.

Exposure estimation and reference to its source : Not available.

Exposure estimation and reference to its source - Workers: 3: Operation of equipment containing engine oils and similar Use in contained systems

Exposure assessment (human): : The risk Management Mesures/Operational Conditions that are identified in the Exposure Scenario are the outcome of a quantitative and qualitative assessment that covers this product.

Exposure estimation and reference to its source : Not available.

Exposure estimation and reference to its source - Workers: 4: Material transfers Non-dedicated facility

Exposure assessment (human): : The risk Management Mesures/Operational Conditions that are identified in the Exposure Scenario are the outcome of a quantitative and qualitative assessment that covers this product.

Exposure estimation and reference to its source : Not available.

Exposure estimation and reference to its source - Workers: 5: Equipment cleaning and maintenance Dedicated facility

Exposure assessment (human):	:	The risk Management Mesures/Operational Conditions that are identified in the Exposure Scenario are the outcome of a quantitative and qualitative assessment that covers this product.
Exposure estimation and reference to its source	:	Not available.

Exposure estimation and reference to its source - Workers: 6: Storage

Exposure assessment (human):	:	The risk Management Mesures/Operational Conditions that are identified in the Exposure Scenario are the outcome of a quantitative and qualitative assessment that covers this product.
Exposure estimation and reference to its source	:	Not available.

Section 4 - Guidance to DU to evaluate whether he works inside the boundaries set by the ES

Environment	:	Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures. Further details on scaling and control technologies are provided in SPERC factsheet. If scaling reveals a condition of unsafe use (i.e., RCRs > 1), additional RMMs or a site-specific chemical safety assessment is required. For further information see www.atiel.org/reach/introduction.
Health	:	Where other risk management measures/operational conditions are adopted, then users should ensure that risks are managed to at least equivalent levels. For further information see www.atiel.org/reach/introduction.

Additional good practice advice beyond the REACH CSA

Environment	:	Not available.
Health	:	Not available.