

Material Safety Data Sheet

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND COMPANY/UNDERTAKING

Material Name : Shell Brake and Clutch Fluid DOT 3
Uses : Brake fluid

Product Code : 001B0640

Manufacturer/Supplier : Shell India Markets Private Limited
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2. COMPOSITION/INFORMATION ON INGREDIENTS

Mixture Description : Mixture of polyalkylene glycol monoalkyl ethers and polyalkylene glycol.

Additional Information : Contains corrosion inhibitor and anti-oxidant formulation.

3. HAZARDS IDENTIFICATION

EC Classification : Not classified as dangerous under EC criteria.

Health Hazards : May cause slight irritation to skin. Moderately irritating to eyes.

Safety Hazards : Not classified as flammable but will burn.

Environmental Hazards : Not classified as dangerous for the environment.

4. FIRST AID MEASURES

General Information : Not expected to be a health hazard when used under normal conditions.

Inhalation : Remove to fresh air. If rapid recovery does not occur, transport to nearest medical facility for additional treatment.

Skin Contact : Remove contaminated clothing. Flush exposed area with water and follow by washing with soap if available. If persistent irritation occurs, obtain medical attention.

Eye Contact : Immediately flush eyes with large amounts of water for at least 15 minutes while holding eyelids open. Transport to the nearest medical facility for additional treatment.

Ingestion : If swallowed, do not induce vomiting; transport to nearest medical facility for additional treatment. If vomiting occurs

Material Safety Data Sheet

Advice to Physician : spontaneously, keep head below hips to prevent aspiration.
: Treat symptomatically.

5. FIRE FIGHTING MEASURES

Clear fire area of all non-emergency personnel.

Specific Hazards : Material will not burn unless preheated. Hazardous combustion products may include: A complex mixture of airborne solid and liquid particulates and gases (smoke). Carbon monoxide. Unidentified organic and inorganic compounds.

Suitable Extinguishing Media : Alcohol-resistant foam, water spray or fog. Dry chemical powder, carbon dioxide, sand or earth may be used for small fires only.

Unsuitable Extinguishing Media : Do not use water in a jet.

Protective Equipment for Firefighters : Proper protective equipment including breathing apparatus must be worn when approaching a fire in a confined space.

Additional Advice : Keep adjacent containers cool by spraying with water.

6. ACCIDENTAL RELEASE MEASURES

Avoid contact with spilled or released material. For guidance on selection of personal protective equipment see Chapter 8 of this Material Safety Data Sheet. See Chapter 13 for information on disposal. Observe the relevant local and international regulations.

Protective measures : Avoid contact with skin and eyes. Use appropriate containment to avoid environmental contamination. Prevent from spreading or entering drains, ditches or rivers by using sand, earth, or other appropriate barriers.

Clean Up Methods : Slippery when spilt. Avoid accidents, clean up immediately. Prevent from spreading by making a barrier with sand, earth or other containment material. Reclaim liquid directly or in an absorbent. Soak up residue with an absorbent such as clay, sand or other suitable material and dispose of properly. For small liquid spills (< 1 drum), transfer by mechanical means to a labelled, sealable container for product recovery or safe disposal. Allow residues to evaporate or soak up with an appropriate absorbent material and dispose of safely. Remove contaminated soil and dispose of safely. For large liquid spills (> 1 drum), transfer by mechanical means such as vacuum truck to a salvage tank for recovery or safe disposal. Do not flush away residues with water. Retain as contaminated waste. Allow residues to evaporate or soak up with an appropriate absorbent material and dispose of safely. Remove contaminated soil and dispose of safely. Transfer to a salvage tank for recovery or safe disposal.

Additional Advice : Notify authorities if any exposure to the general public or the environment occurs or is likely to occur.

7. HANDLING AND STORAGE

General Precautions : Use local exhaust ventilation if there is risk of inhalation of vapours, mists or aerosols. Use the information in this data sheet as input to a risk assessment of local circumstances to

Material Safety Data Sheet

	help determine appropriate controls for safe handling, storage and disposal of this material.
Handling	: Avoid prolonged or repeated contact with skin. Avoid inhaling vapour and/or mists. When handling product in drums, safety footwear should be worn and proper handling equipment should be used. Properly dispose of any contaminated rags or cleaning materials in order to prevent fires.
Storage	: Tanks must be clean, dry and rust-free. Keep container tightly closed. Must be stored in a diked (bunded) well-ventilated area, away from sunlight, ignition sources and other sources of heat. Cleaning, inspection and maintenance of storage tanks is a specialist operation, which requires the implementation of strict procedures and precautions. Drums should be stacked to a maximum of 3 high. Storage Temperature: Ambient. 60 °C maximum
Product Transfer	: Keep containers closed when not in use. Do not pressurize drum containers to empty.
Recommended Materials	: For containers or container linings, use mild steel or high density polyethylene. Stainless steel. Carbon steel.
Unsuitable Materials	: PVC.
Additional Information	: Polyethylene containers should not be exposed to high temperatures because of possible risk of distortion. Ensure that all local regulations regarding handling and storage facilities are followed.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

If the American Conference of Governmental Industrial Hygienists (ACGIH) value is provided on this document, it is provided for information only.

Occupational Exposure Limits

Additional Information : Wash hands before eating, drinking, smoking and using the toilet.

Biological Exposure Index (BEI)

No biological limit allocated.

Exposure Controls : The level of protection and types of controls necessary will vary depending upon potential exposure conditions. Select controls based on a risk assessment of local circumstances. Appropriate measures include: Adequate ventilation to control airborne concentrations. Where material is heated, sprayed or mist formed, there is greater potential for airborne concentrations to be generated.

Personal Protective Equipment : Personal protective equipment (PPE) should meet recommended national standards. Check with PPE suppliers.

Respiratory Protection : No respiratory protection is ordinarily required under normal conditions of use. In accordance with good industrial hygiene

Material Safety Data Sheet

practices, precautions should be taken to avoid breathing of material. If engineering controls do not maintain airborne concentrations to a level which is adequate to protect worker health, select respiratory protection equipment suitable for the specific conditions of use and meeting relevant legislation. Check with respiratory protective equipment suppliers. Where air-filtering respirators are suitable, select an appropriate combination of mask and filter. Select a filter suitable for combined particulate/organic gases and vapours [boiling point >65°C(149 °F)].

Hand Protection

: Where hand contact with the product may occur the use of gloves approved to relevant standards (e.g. Europe: EN374, US: F739, AS/NZS:2161) made from the following materials may provide suitable chemical protection: PVC, neoprene or nitrile rubber gloves. Suitability and durability of a glove is dependent on usage, e.g. frequency and duration of contact, chemical resistance of glove material, dexterity. Always seek advice from glove suppliers. Contaminated gloves should be replaced. Personal hygiene is a key element of effective hand care. Gloves must only be worn on clean hands. After using gloves, hands should be washed and dried thoroughly. Application of a non-perfumed moisturizer is recommended. For continuous contact we recommend gloves with breakthrough time of more than 240 minutes with preference for > 480 minutes where suitable gloves can be identified. For short-term/splash protection we recommend the same, but recognise that suitable gloves offering this level of protection may not be available and in this case a lower breakthrough time may be acceptable so long as appropriate maintenance and replacement regimes are followed. Glove thickness is not a good predictor of glove resistance to a chemical as it is dependent on the exact composition of the glove material.

**Eye Protection
Protective Clothing**

: Chemical splash goggles (chemical monogoggles).
: Skin protection not ordinarily required beyond standard issue work clothes.

Monitoring Methods

: Monitoring of the concentration of substances in the breathing zone of workers or in the general workplace may be required to confirm compliance with an OEL and adequacy of exposure controls. For some substances biological monitoring may also be appropriate. Validated exposure measurement methods should be applied by a competent person and samples analysed by an accredited laboratory. Examples of sources of recommended exposure measurement methods are given below or contact the supplier. Further national methods may be available.

National Institute of Occupational Safety and Health (NIOSH), USA: Manual of Analytical Methods <http://www.cdc.gov/niosh/>
Occupational Safety and Health Administration (OSHA), USA: Sampling and Analytical Methods <http://www.osha.gov/>
Health and Safety Executive (HSE), UK: Methods for the Determination of Hazardous Substances <http://www.hse.gov.uk/>

Material Safety Data Sheet

	Institut für Arbeitsschutz Deutschen Gesetzlichen Unfallversicherung (IFA), Germany. http://www.dguv.de/inhalt/index.jsp L'Institut National de Recherche et de Sécurité, (INRS), France http://www.inrs.fr/accueil
Environmental Exposure Controls	: Minimise release to the environment. An environmental assessment must be made to ensure compliance with local environmental legislation. Information on accidental release measures are to be found in section 6.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	: Amber or as dyed. Liquid at room temperature.
Odour	: Ethereal.
pH	: Typical 7.0 - 11.5 As 50% volume aqueous ethanol solution.
Initial Boiling Point and Boiling Range	: > 238 °C / 460 °F
Melting / freezing point	: Data not available
Flash point	: > 100 °C / 212 °F
Upper / lower Flammability or Explosion limits	: Data not available
Auto-ignition temperature	: > 300 °C / 572 °F
Vapour pressure	: Data not available
Specific gravity	: Typical 1.000 - 1.065
Density	: Typical 1,000 - 1,065 kg/m3
Water solubility	: Miscible.
Solubility in other solvents	: Data not available
n-octanol/water partition coefficient (log Pow)	: Data not available
Dynamic viscosity	: Data not available
Kinematic viscosity	: < 1,500 mm2/s at -40.00 °C / -40.00 °F > 1.5 mm2/s at 100.00 °C / 212.00 °F
Vapour density (air=1)	: Data not available
Electrical conductivity	: This material is not expected to be a static accumulator.
Evaporation rate (nBuAc=1)	: Data not available

10. STABILITY AND REACTIVITY

Stability	: Stable.
Conditions to Avoid	: Exposure to water vapour.
Materials to Avoid	: Mineral oils. Water vapour.
Hazardous Decomposition Products	: Hazardous decomposition products are not expected to form during normal storage.

11. TOXICOLOGICAL INFORMATION

Basis for Assessment	: Information given is based on data on the components and the toxicology of similar products. Unless indicated otherwise, the data presented is representative of the product as a whole, rather than for individual component(s).
Acute Oral Toxicity	: Expected to be of low toxicity: LD50 > 5000 mg/kg
Acute Dermal Toxicity	: Expected to be of low toxicity: LD50 > 5000 mg/kg
Acute Inhalation Toxicity	: Expected to be of low toxicity: LC50 >5 mg/l Rat
Skin Irritation	: Expected to be non-irritating to skin.
Eye Irritation	: Expected to be non-irritating to eyes.

Material Safety Data Sheet

Respiratory Irritation	: Inhalation of vapours or mists may cause irritation.
Sensitisation	: Not expected to be a skin sensitiser.
Repeated Dose Toxicity	: Not expected to be a hazard.
Mutagenicity	: Not expected to be mutagenic.
Carcinogenicity	: Not expected to be carcinogenic.
Reproductive and Developmental Toxicity	: Not expected to be a hazard.

12. ECOLOGICAL INFORMATION

Ecotoxicological data have not been determined specifically for this product. Information given is based on a knowledge of the components and the ecotoxicology of similar products. Unless indicated otherwise, the data presented is representative of the product as a whole, rather than for individual component(s).

Acute Toxicity	: Expected to be practically non toxic: LL/EL/IL50 > 100 mg/l (to aquatic organisms) LL/EL50 expressed as the nominal amount of product required to prepare aqueous test extract.
Microorganisms	: Expected to be practically non toxic: LL/EL/IL50 > 100 mg/l
Mobility	: Liquid under most environmental conditions. If product enters soil, it will be mobile and may contaminate groundwater. Dissolves in water.
Persistence/degradability	: Major constituents are expected to be inherently biodegradable, but the product contains components that may persist in the environment.
Bioaccumulation	: Not expected to bioaccumulate significantly.
Other Adverse Effects	: Product is a mixture of non-volatile components, which are not expected to be released to air in any significant quantities. Not expected to have ozone depletion potential, photochemical ozone creation potential or global warming potential.

13. DISPOSAL CONSIDERATIONS

Material Disposal	: Recover or recycle if possible. It is the responsibility of the waste generator to determine the toxicity and physical properties of the material generated to determine the proper waste classification and disposal methods in compliance with applicable regulations. Do not dispose into the environment, in drains or in water courses.
Container Disposal	: Dispose in accordance with prevailing regulations, preferably to a recognised collector or contractor. The competence of the collector or contractor should be established beforehand.
Local Legislation	: Disposal should be in accordance with applicable regional, national, and local laws and regulations.

14. TRANSPORT INFORMATION

Land (as per ADR classification): Not regulated

This material is not classified as dangerous under ADR regulations.

IMDG

Material Safety Data Sheet

This material is not classified as dangerous under IMDG regulations.

IATA (Country variations may apply)

This material is either not classified as dangerous under IATA regulations or needs to follow country specific requirements.

Additional Information : MARPOL Annex 1 rules apply for bulk shipments by sea.

15. REGULATORY INFORMATION

The regulatory information is not intended to be comprehensive. Other regulations may apply to this material.

EC Classification	: Not classified as dangerous under EC criteria.
EC Symbols	: No Hazard Symbol required
EC Risk Phrases	: Not classified.
EC Safety Phrases	: S2 Keep out of the reach of children. S24 Avoid contact with skin. S46 If swallowed, seek medical advice immediately and show this container or label.

Chemical Inventory Status

EINECS	: Not all components listed.
TSCA	: Not all components listed.
Other Information	: The Manufacture, Storage and Import of Hazardous Chemicals Rules 1989 (amended version issued 2000). The Factories Act, 1948, The Second Schedule: Permissible levels of certain chemical substances in work environment, as amended through 1987. India Central motor Vehicles (Amendment) Rules 1993.

16. OTHER INFORMATION

R-phrases)

Not classified.

SDS Version Number	: 2.0
SDS Effective Date	: 28.02.2013
SDS Revisions	: A vertical bar () in the left margin indicates an amendment from the previous version.
SDS Distribution	: The information in this document should be made available to all who may handle the product.
Disclaimer	: This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not

Material Safety Data Sheet

therefore be construed as guaranteeing any specific property of the product.