



TAG SOLVENT PRODUCTS (PTY)LTD.
MATERIAL SAFETY DATA SHEET
BENZINE

1 CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Common name	: BENZINE
Supplier	: TAG Solvent Products Mallet Road/Weg Knights Germiston 1401 Republic of South Africa TEL: +27 11 822-1600
Synonym	: Coal oil, C5-C7 n-Paraffin's.
Trade name	: Benzine
Material uses	: Cleaning, extraction of oils, manufacture of rubber solutions, tyres, adhesives, inks and lacquers.

2 COMPOSITION / INFORMATION ON INGREDIENTS

Name	CAS#	% By Weight	Exposure Limits
n-Hexane	110-54-3		ACGIH TLV (United States, 2004) TWA: 50 ppm 8 hour(s) OSHA PEL (United States, 1993) : 500ppm : 1800mg/m ³
Heptane	142-82-5		ACGIH TLV (United States, 2004) TWA: 400ppm 8 hour(s) STEL: 500ppm 15 minute(s) OSHA PEL ZI (United States, 1993) : 500ppm : 2000mg/m ³
Pentane	109-66-0		ACGIH TLV (United States, 2004) TWA: 600ppm 8 hour(s) OSHA PEL (United States, 1993) : 1000ppm : 2950 mg/m ³
n-Butane	106-97-8		ACGIH TLV (United States, 2004) TWA : 1000 ppm 8 hour(s)

3 HAZARDS IDENTIFICATION	
Physical state and appearance	: Liquid.
Emergency overview	: WARNING! EXTREMELY FLAMMABLE LIQUID AND VAPOUR. VAPOUR MAY CAUSE FLASH FIRE. MAY CAUSE SKIN IRRITATION. MAY BE HARMFUL IF ABSORBED THROUGH SKIN. SUSPECT CANCER HAZARD. CONTAINS MATERIAL, WHICH CAN CAUSE CANCER. Risk of cancer depends on duration and level of exposure.
Routes of entry	: Eye contact. Ingestion. Inhalation.
Potential acute health effects	
Eyes	: Hazardous in case of eye contact (irritant).
Skin	: Sensitization of the product: not available. Hazardous in case of skin contact (irritant). Non-permeator by skin. Sever over exposure can result in death. Skin inflammation is characterized by itching, scaling, reddening, or, occasionally, blistering.
Inhalation	: Extremely hazardous in case of inhalation (lung irritant). May be fatal if inhaled.
Ingestion	: Hazardous in case of ingestion. May be fatal if swallowed.
Potential chronic health effects	: CARCINOGENIC EFFECTS: A2 (Suspected for human). By ACGIH. MUTAGENIC EFFECTS: non-mutagenic foe mammals. Non-mutagenic for bacteria and/or yeast. TERATOGENIC EFFECTS: Not available.
Medical conditions aggravated by overexposure	: Repeated exposure to a highly toxic material may produce general deterioration of health be an accumulation in one or many organs.
Overexposure/signs/Symptoms	: CNS depression, headaches, dizziness, nausea, vomiting. NOTE: Aspiration hazard. May be aspirated into lungs if swallowed or during vomiting, this could be fatal.

See toxicological information (section 11)

4	FIRST AID MEASURES
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Eye contact	: Check for and remove any contact lenses. DO NOT use eye ointment. Get medical attention.
Skin contact	: In the case of contact, flush the skin with plenty of water. Gently and thoroughly wash the contaminated skin with running water and non-abrasive soap. Be particularly careful to clean folds, Cervices, creases and groin. Cover the irritated skin with an emollient. Wash clothes before reuse. Thoroughly clean shoes before reuse. If irritation persists seek medical attention.
Hazardous skin contact	: Wash with a disinfectant soap and cover skin with an anti-bacterial cream. Seek medical attention.
Inhalation	: If inhaled, remove to fresh air and allow victim to rest. Get medical attention.
Hazardous inhalation	: If inhaled, remove victim to a safe area as soon as possible. Loosen tight clothing such as a collar, tie, belt or waistband. If breathing is laboured, give oxygen If not breathing apply artificial respiration. Get medical attention. WARNING! It may be hazardous to the person performing aid to give CPR when inhaled material is toxic.
Ingestion	: DO NOT induce vomiting unless directed to do so by medical personnel. Examine the lips and mouth to ascertain whether the tissues are damaged, a possible indication that the toxic material was ingested; the absence of such signs, however, is not conclusive. Loosen tight clothing such as a collar, tie, belt or waistband. If not breathing apply artificial respiration. Get medical attention.
Hazardous ingestion	: No additional information
Notes to physician	: Not available.

5	FIRE FIGHTING MEASURES
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Flammability of the product	: Flammable
Autoignition temperature	: 235 °C
Flash points	: CLOSED CUP: < -10 °C (14 °F).
Flammable limits	: Not available.
Products of combustion	: .Not available.

Fire hazards in presence of various substances	: Highly flammable in the presence of open flames and sparks, of heat and oxidizing materials. Non-flammable in presence of shocks.
Explosion hazards in presence of various substances	: Highly explosive in the presence of open flames and sparks, of heat and oxidizing materials. Non-flammable in presence of shocks.
Fire fighting media and instructions	: Flammable liquid, insoluble in water. SMALL FIRE: Use DRY chemicals, CO ₂ , alcohol foam or water spray. LARGE FIRE: Use water spray or fog. Cool containing vessels with water jet in order to prevent pressure build-up, autoignition or explosion
Protective clothing (fire)	: Wear MSHA/NIOSH self-contained respirator or equivalent and full protective gear.
Special remarks on fire hazards	: No additional remarks.
Special remarks on explosive hazards	: No additional remarks.

6 ACCIDENTAL RELEASE MEASURES

Small spill or leak	: Absorb with an inert dry material and place in an appropriate waste disposal container.
Large spill or leak	: Flammable liquid, insoluble in water. Keep away from heat. Keep away from sources of Ignition. Stop leak if without risk. Absorb with DRY earth, sand or other non-combustible material. DO NOT get water inside the container. DO NOT touch spilled material. Prevent entry into sewers, basements or confined areas; dike if needed. Eliminate all sources of ignition. Call for assistance on disposal. Be careful that the product is not present at a concentration level above TLV. Check TLV on the MSDS and with local authorities.

7 HANDLING AND STORAGE

Handling	: Keep locked up. DO NOT ingest. Do not breathe gas, fumes, vapour or spray. In the case of insufficient ventilation, wear suitable respiratory equipment. If ingested, seek medical advice immediately and show the container label. Avoid contact with eyes and skin. Keep away from incompatibles such as oxidizing agents, reducing agents, organic materials, acids and alkalis.
Storage	: Flammable materials should be stored in a separately safety storage cabinet or room. Keep container in a cool, well-ventilated area. A refrigerated room would be preferable for materials with a flash point lower than 37.8°C (100°F). Keep container tightly closed and sealed until ready for use. Ground all equipment containing material. Keep away from heat. Avoid all possible sources of ignition (spark of flame).

8	EXPOSURE CONTROLS, PERSONAL PROTECTION
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Engineering controls	: Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapour below their respective threshold limit values. Ensure that eyewash stations and safety showers are proximal to the work-station location.
Personal protection	
Eyes	: Splash goggles.
Body	: Lab coat.
Respiratory	: Vapour and dust respirator. Be sure to use an MSHA/NIOSH approved respirator equivalent. Wear appropriate respirator when ventilation is inadequate.
Hands	: Butyl rubber gloves.
Feet	: Not applicable.
Protective clothing	: Splash goggles. Lab coat. Vapor respirator. Butyl gloves.
Personal protection in case of large spills	: Splash goggles. Full suit. Vapor and dust respirator. Boots. Gloves. A self-contained breathing apparatus should be used to avoid inhalation of the product. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling the product.

Product name Hydrocarbon blend	Exposure limits ACGIH TLV (1996). TWA: 200ppm TWA: 350 mg/m ³ STEL: 2500 mg/m ³
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9	PHYSICAL AND CHEMICAL PROPERTIES
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Physical state and appearance	: Liquid (Clear to slightly hazy liquid)
Colour	: Colourless (Light).
Odor	: Neutral to mild petroleum smell.
Taste	: Not available.
Molecular weight	: Average: 70
Molecular formula	: C5-C7 n-Paraffins
PH (1% soln/water)	: Not applicable.
Boiling/condensation point	: 59°C (138.2°F)
Melting/freezing point	: -90°C
Critical temperature	: Not available.
Specific gravity	: 0.666(water=1)
Vapor pressure	: 480 kPa (@ 37.8 °C)
Vapor density	: Not available
Volatility	: Not available
Odor threshold	: Not available
Evaporation rate	: Not available
VOC	: Not available
Viscosity	: Not available
LogK_{ow}	: Not available
Iconicity (in water)	: Not available
Dispersion properties	: Not available
Solubility	: Insoluble in cold water.
Physical chemical comments	: No additional remark.

10 STABILITY AND REACTIVITY

Stability and reactivity	: The product is stable.
Conditions of instability	: Sparks, open flames, heat and other ignition sources.
Incompatibility with various substances	: Highly reactive with oxidizing agents.
Hazardous decomposition products	: No data available
Hazardous polymerization	: Will not occur.

11 TOXICOLOGICAL INFORMATION

Toxicity to animals	: Acute oral toxicity (LD50): >5000 mg/kg [Rat]. Acute dermal toxicity (LC50): 2000 mg/kg 4 hour(s) [Rabbit].
Chronic effects on humans	: CARCINOGENIC EFFECTS: A2 (suspected for humans) by ACGIH. MUTAGENIC EFFECTS: Non-mutagenic for mammals. Non-mutagenic for bacteria and/or yeast. The substance is toxic to lungs, the nervous system, liver and skin.
Other toxic effects on humans	: Extremely hazardous in the case of inhalation. Hazardous in case of skin contact, of ingestion, of eye contact.
Special remarks on toxicity to animals	: No additional remark.
Special remarks on chronic effects on humans	: No additional remark.
Special remarks on other toxic effects on humans	: No additional remark.


12 ECOLOGICAL INFORMATION

Ecotoxicity	: n-Paraffins not toxic to Pseudomonas putida even at high concentrations of 100 000 ppm. Only maximum of 5% inhibition was observed.
BOD and COD	: n-Paraffins are not readily biodegradable; they reach 25% degradation in 28days. This product is very volatile.
Biodegradable/OECD	: No data available.
Mobility	: No data available. Possibly hazardous short-term degradation products not likely. However, long-term degradation products may arise.
Toxicity of the products of biodegradation	: The products of degradation are less toxic than the product itself.
Special remarks on the products of biodegradation	: No additional remark.

13 DISPOSAL CONSIDERATIONS
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Waste information	: Type: not available. Location: not available. Classification: OECD-CODE AC 030 (Ignitable (D001) Toxic (D018)) Disposal: not available. Storage: not available. Recycling: not available.
Waste stream	: Not available.

14 TRANSPORT INFORMATION
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Regulatory information	UN number	Class	Packing group	Label	Additional information
DOT Classification	UN 3295	DOT CLASS 3: Flammable liquid.	III		Flammable liquid n.o.s. Hydrogen blend
Marine pollutant					Flammable liquid n.o.s. Hydrogen blend
TDG Classification		TDG CLASS 3: Flammable liquid.	II		
ADR/RID Classification		ADR CLASS: Flammable liquid A. Flammable liquid with a flash point <21°C (70°F).			
IMO/IMDG Classification ICAO/IATA Classification		IMDG CLASS 3: Flammable liquid. IATA CLASS 3: Flammable liquid.			

15 REGULATORY INFORMATION

HCS Classification	: HCS Class: Flammable liquid having flash point lower than 37.8°C (100°F) HCS Class: Target organ effects
U.S. Federal regulations	: TSCA 8(b) inventory: KEROSOL 50/115 Clean water act (CWA) 307: No products were found. Clean water act (CWA) 311: No products were found. Clean water act (CAA) 112 accidental release prevention: No products were found. Clean water act (CAA) 112 regulated flammable substances: No products were found. Clean water act (CAA) 112 regulated toxic substances: No products were found.
State regulations	: Pennsylvania RTK: Hydrocarbon blend Florida: Hydrocarbon blend Minnesota: Hydrocarbon blend Massachusetts RTK: Hydrocarbon blend California prop. 65: This product contains the following ingredients for which the State of California has found to cause cancer, birth defects or other reproductive harm, which would require a warning under the statute: No products were found

International Regulations	
WHMIS (Canada)	: WHMIS CLASS B-2: Flammable liquid with a flash point lower than 37.8°C WHMIS CLASS D-2B: Material causing other toxic effects (TOXIC)
	<u>CEPS DSL:</u> Hydrocarbon blend : Not available.
EINECS	: R3 - Extreme risk of explosion by shock, friction, fire or other sources of ignition.
DSCL (EEC)	: R12 – extremely flammable. : R22 – Harmful if ingested.
	: No products were found.
International Lists	

16 OTHER INFORMATION

Label requirements	: EXTREMELY FLAMMABLE LIQUID AND VAPOUR, VAPOUR MAY CAUSE FLASH FIRE. MAY BE HARMFUL IF ABSORBED THROUGH THE SKIN, IF WALLOUED OR INHALED. CAN CAUSE DAMAGE TO THE FOLLOWING SPECIFIC ORGAN (S) AND SYSTEM (S): lungs, central nervous system, liver, skin. MAY CAUSE SKIN IRRITATION. MAY CAUSE EYE IRRITATION. CAUSES RESPIRATORY TRACT IRRITATION.
National Fire Protection Association (U.S.A.)	
Hazardous Material information System (U.S.A.)	[Frame1]

References	<ul style="list-style-type: none"> : CHRIS: Chemical Hazards Response Information System; United States Coast Guard, Issue: 97:3 (August, 1997). - Encyclopedia of Chemical Technology; Third edition; Kirk-Othmer; vol 5 & 17. - BDH; Hazard Data disks, Version 3 - RTECHS: National Institute for Occupational Safety and Health, Issue: 97-3 (August 1997). - CESARS: Chemical Evaluation and Retrieval System, Produced by: Ontario Ministry of Environment and Michigan Department of Natural Resources, Issue: 97-3 (August, 1997). - CHEMINFO: Canadian Centre for Occupational Health and Safety, Issue: 97-3 (August 1997). – BDH; Hazard Data Disk, Version 3. – CESARS: Chemical Evaluation and Retrieval System, Produced by: Ontario Ministry of Environment and Michigan Department of Natural Resources, Issue 97-3 (August 1997). - TOMES Plus System: Toxicology, Occupational Medicine & Environmental Series: incorporating: - MEDITEX, HAZARDTEXT, 1st Medical Response Protocols, INFOTEXT, HSDB, CHRIS, OHM/TAD, IRIS, NIOSH Pocket Guide, RTECS, NJ Facts Sheets, North American Emergency Response Guides, REPROTEXT, REPROTOX, TERIS, Shepard's Catalog of Teraogenic Agents. - LOLI Database: The regulated List of Lists.
Other special considerations	: No additional remarks.
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Notice to reader:

This MSDS summarizes at the date of issue our best knowledge of the health, safety and environmental hazard information related to the product, and in particular how to safely handle, use and transport the product in the workplace. Since TAG Solvent Products (PTY) LTD. and its subsidiaries cannot anticipate or control the conditions under which the product may be handled, used, stored or transported, each user must, prior to usage, review MSDS in the context of how the user intends to handle, use, store or transport the product in the workplace and beyond, and communicate such information to all relevant parties. If clarification or further information is required to ensure that an appropriate assessment can be made, the user should contact the company.

We shall not assume any liability for the accuracy or completeness of the information contained herein or any advice given unless there has been gross negligence on our part. In such event our liability shall be limited only to direct damages suffered. Our responsibility for the product as sold is subject to our standards terms and conditions, a copy of which is sent to our customers and is also available upon request. All risk with possession and application of the product passes on delivery.