

MATERIAL SAFETY DATA SHEET (MSDS)



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| 1. MATERIAL AND PRODUCER IDENTIFICATION | |
|---|--|
| PRODUCT NAME | : AVIATION GASOLINE (AVGAS) 100 LL |
| USE | : AVIATION PISTON ENGINE |
| PRODUCER | : PT PERTAMINA (PERSERO) Unit Aviation Wisma Nusantara Building 22 nd Floor Jl. MH. Thamrin Kav. 59 Jakarta Pusat – 10350 Telepon : +6221- 3920811 / 3920716 / 3920638 Ext : 2240 / 2260 Fax : +6221- 3920639 / 39200684 E-mail : aviation@pertamina.com |
| Emergency Telephone Numbers Within 24 Hours | : Website : www.pertamina.com +6221– 5507482 Soekarno Hatta Fuel Terminal & Hydrant Installation (SHAFTHI) |
| MSDS Phone Number Information | : +6221- 3920811 / 3920716 / 3920638 Ext : 2240 / 2260 |

| 2. HAZARD IDENTIFICATION | |
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| Hazard Communication Standard | : OSHA 29 CFR 1910.1200 (dangerous) |
| Exposure Effects | : Eye irritation, respiratory tract irritation, dizziness, nausea, loss of consciousness, dry skin and chapped. Inhalation can cause greater damage to the liver, loss of consciousness and death. Abuse (inhale / ingest), misuse (eg, as a solvent, washing materials) in a long period of time can result in neurological effects are highly variable, impaired production of red blood grains and spinal cord damage and anemia. Impaired nervous system can lead to fatigue, chronic headaches, impaired vision and hearing. These effects need to be avoided may occur in places / supply & distribution environment, for example at Depot, DPPU, and others. |
| Emergency Response Data | : Blue liquid. Highly flammable |

| 3. MATERIAL COMPOSITION/IDENTITY INFORMATION | | | | | |
|--|------------|------------------------------|-------------------|--|-----------------|
| Chemical Name and Synonyms | : | Gasoline added with Additive | | | |
| Chemical Identity | CAS | EINECS | Symbol (s) | R-phrase | Conc |
| Gasoline, low boiling point naphtha | 86290-81-5 | 289-220-8 | F+, Xi, T, Xn, N | R12, R38, R45 R46, R63, R65, R67, R51/53 | 99.00 – 100.00% |
| Tetraethyl lead | 78-00-2 | 201-075-4 | T+, N | R26/27/28, R61, R62, R33, R50/53 | 0,00 – 0,125% |

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| 4. FIRST AID MEASURES | |
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| Eye Contact | : Rinse eyes with water as much as possible. If there is irritation to the eyes soon went to the doctor. |
| Skin contact | : Wash the affected body part with soap and water. Wash clothes that contaminated before reuse. |
| Inhaled | : Stop / Avoid further inhalation. In the event of respiratory tract irritation, dizziness, unconsciousness, then immediately seek help health professionals or immediately call a physician. When the BREATH STOPS, GIVE RESUSCITATION FROM MOUTH TO MOUTH |
| Consumed | : If swallowed immediately give 1 or 2 glasses of water and then immediately call / Bring to a doctor, the Emergency Installation or other hazard services center |
| Concern | : Never once in a while stimulating effect vomiting or give something to patients who are unconscious. |
| Note to Physician | : The ingested material is likely to be absorbed into the lungs can result in pneumoconiosis chemically, so it needs handling right. |

| 5. PROCEDURES FOR FIRE FIGHTING | |
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| Media Fire Fighting | : Carbon Dioxide, Dry Chemical, and Foam |
| Fire Extinguished Procedure | |
| <ul style="list-style-type: none"> • Carbon Dioxide • Dry Chemical Powder • Foam / Busa | : Spray it to the front fire from upwind : Spray it to the front fire from upwind : When in a container, spray the foam on the inside wall, not to the burning liquid in the direction of the wind. When only a scattered, spray it to the fire until all covered in the same direction with the wind. For fires in relatively closed areas, the fire fighters must wear |
| Special Protective Equipment | : Self Contained Breathing Apparatus (SCBA). Occurs when there is an unprotected storage tanks |
| Other Fire and Explosion Hazards | : Around the fire location |
| NFPA Hazard ID | : Ease Burned = 3 Instability = 1 |
| Decomposition of Hazardous Materials | : Carbon monoxide |

| 6. PREVENTION PROCEDURES SPILL AND LEAK | |
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| Procedure Notes | : Report the spill happened according to the determined local authorization. If the spills are expected to enter drains, etc., report it immediately. |
| Spill or Leakage Procedure | : Put away all conditions that can enable the occurrence of ignition. Do the absorption of the spills using a sorbent, sawdust saws, clay and other fire retardant materials. Clean up and dispose of in landfills that have been determined by local regulations. |
| Environmental Prevention | : Prevent the entry of spills into sewers, drains, or seepage into the ground. |

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| 7. HANDLING AND STORAGE | |
| Handling | : DO NOT SUCK Avgas 100 by MOUTH. Avgas 100 MUST NOT BE USED AS SOLVENTS OR AS WASH MATERIALS. Equipment should Explotion proof and do not spray. Handling in open areas antidotal the possibility of sparks. Containers that can be moved must go through a feasibility test. At the time of filling the container should placed on the surface (ground) while the instrument should cover remains attached to the container to anticipate potential the occurrence of static electricity. |
| Storage | : Storage place should be in "grounding" and "bonding" and equipped with self-closing valves, pressure vacuum bungs and flame trap. Keep away from flammable substance, fire, electricity or heat source Other. |

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| 8. EXPOSURE CONTROL / PERSONAL PROTECTION | |
| Ventilation | : When Avgas 100 is used in a relatively closed room must be provided with vents out and the equipment used must be Explotion proof. |
| Respiratory Protective Equipment | : Wear respiratory protective Equipment if the concentration in the air has exceeded the threshold limit value. |
| Eyes Protective Equipment | : Wear a googles for chemicals |
| Skin protection | : Use gloves rubber or PVC. Apply a good personal hygiene |
| The threshold values | : 300 ppm |

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| 9. PHYSICAL AND CHEMICAL PROPERTIES | |
| Appearance | : Clear, Blue, Bright Liquid |
| Odour | : Hydrocarbon |
| pH | : Data not available |
| Initial Boiling Point and Boiling Range | : 25 – 170 °C |
| Freezing/melting Point | : Data not available |
| Flash Point | : < -40 °C |
| Lower/upper Flammability or explosion limits | : Data not available |
| Auto Ignition Temperature | : > 250 °C |
| Vapour Pressure | : 380 -490 hPa at 37,8 °C |
| Specific gravity | : Data not available |
| Density | : 710 Kg/L at 15 °C |
| Solubility in other solvents n- octanol/water partition coefficient (low Pow) | : Data not available 2-7 |
| Kinematic viscosity | : 0,5 – 0,75 mm2/s at 40 °C |
| Vapour Density (air=1) | : Data not available |

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| 10. STABILITY AND REACTIVITY | |
| Stability against temperature, light, etc. | : Stable |
| State of the situation that should be avoided | : Heat, sparks, flame or conditions that can cause static electricity |
| Incompatibility (Materials to avoid) | : Halogens, strong acids, bases and strong oxidizing agents |

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| Decomposition of Hazardous Materials | : Carbon Monoxide |
| Polymerization formation of hazardous materials | : not occur |

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| 11. TOXICOLOGICAL DATA | |
| -----TOXICOLOGICAL SUBKRONIK----- | |
| Experiments conducted on mice with exposure through the skin for 5 days / week for 90 days at doses of exposure are expected to be higher than normal. In the experiment was conducted observations of the inner organs and clinical chemistry of body fluids, but the result shows that this product has no harmful effects. | |
| -----REPRODUCTIVE TOXICOLOGY----- | |
| Exposure through the skin of pregnant mice at representative dosage does not give adverse effects to the mother and to their descendants. | |
| -----TOXICOLOGICAL KRONIK ----- | |
| Base oil contained in these products SOLVENT REFINED OR IS hydrotreated. Studies conducted by rubbing this product on mice skin does not show carcinogenic effects. | |
| ----- OTHER TOXICOLOGY DATA ----- | |
| Laboratory experiments on this product after handling gasoline showed activity in the skin carcinogens. This is especially true if the wearer after use of these products does not rinse his hands. However, exposure to this product after handling diesel oil will give no carcinogenic effect. | |

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| 12. ECOLOGICAL INFORMATION | |
| The influence and damage to the environment | : Seeps into the ground can cause groundwater contamination or aquaifer, Large volumes may penetrate soil and could contaminate groundwater, damage arganisms |

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| 13. WASTE DISPOSAL | |
| Waste disposal | : This product can be burned in a covered place for the purpose of obtaining energy, or burned in the incinerator. This product can also be processed at a recycling of materials that have been determined by the government. |
| Information Regulations | : Avgas sludge waste is classified into B3 waste, and its disposal of this material should be in accordance with B3 waste. Disposal should be in accordance with applicable regional, national, and local laws and regulations. Local regulations may be more stringent than regional or national requirements and must be complied with. |

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| 14. TRANSPORT INFORMATION | |
| USA DOT | |
| SHIPPING NAME | : Aviation Gasoline |
| HAZARD CLASS & DIV | : III |
| ID/UN NUMBER | : 1203 |
| ERG NUMBER | : 128 |
| PACKING GROUP | : PG II |
| DANGEROUS WHEN WET | : NO |
| POISON | : NO |
| PLACARD | : Flammable |
| RID/ADR | |
| HAZARD CLASS | : 3 |
| HAZARD SUB CLASS | : 3 (b) |

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| LABEL | : | 3 |
| DANGER NUMBER | : | 33 |
| UN NUMBER | : | 1203 |
| SHIPPING NAME | : | Aviaition Gasoline |
| IMO | | |
| HAZARD CLASS & DIV | : | 3 |
| ID/UN NUMBER | : | 1203 |
| PACKING GROUP | : | PG II |
| SHIPPING NAME | : | Aviation Gasoline |
| LABEL (s) | : | Flammable Liquid |
| ICAO/IATA | | |
| UN no | : | 1203 |
| Proper Shipping Name | : | Gasoline |
| Technical name | : | Leaded |
| Class / Devision | : | 3 |
| Packing group | : | II |

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| 15. INFORMATION LEGISLATION | |
| Status inventory | : Listed on the TSCA, EINECS / ELINCS and AICS. |
| ECC labeling | : Nothing |
| Symbol | : Xn = Harmful, F = Flammable |
| Risk Phrase(s) | : R10-22-38-52 / 53 Flammable. Harmful if swallowed. Irritation of the skin. Harmful to aquatic life |
| Safety Phrase(s) : | : S43-24-62-61. Be sure to do exposure and read the instructions before use. In the circumstances of accident or if you feel uncomfortable, seek medical help. Keep out of children's reach. Avoid contact with skin. If a fire occurs, use CO2, dry chemical or foam. |

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| 16. REGULATION INFORMATION | |
| WARNING LABEL: | |
| <ul style="list-style-type: none">• Containing aromatic petroleum oil.• Harmful in contact with skin• Flammable | |
| CAN CAUSE SKIN CANCER, DAMAGE TO LIVER AND DAMAGE TO BLOOD COMPONENTS. | |
| <ul style="list-style-type: none">• The condition and suitability of products for users beyond our guarantee, all risks of use of the product is borne by the user. Warning signs and procedures for handling this product must have by users and personnel who handle these products. Forbidden to change this document, except with law legacy. | |