SAFETY DATA SHEET

1. IDENTIFICATION

Product identifier	:	Low Aromatics White Spirit (LAWS) 2
Other means of identification	:	Special Mineral Turpentine (SMT), Paraffinic, Naphthenic, Aliphatic Solvent
Recommended use of the chemical and restrictions on use	:	This product is used as: • Diluents for paints, lacquers, and varnishes • Solvents and diluents in printing ink industry • Component of tire retreading • Adhesives, pharmacy industry, cleaning and degreasing industry • Supporting printing process in textile industry
Manufacturer	:	PT Pertamina (Persero) Jl. Medan Merdeka Timur 1A Jakarta Pusat ZIP Code 10110 Phone: 1500-000 Email: pcc@pertamina.com
Emergency phone number	:	1500-000

2. HAZARD IDENTIFICATION

Classification	:	Aspiration hazard, category 1
Signal word	:	Danger
Hazard statement	:	Health Hazard H304 - May be fatal if swallowed and enters airways.
Precautionary statement	:	Response P301 + P310 - IF SWALLOWED: Immediately call a POISON CENTER/doctor. P331 - Do NOT induce vomiting. Storage P405 - Store in a closed container. Disposal P501 - Dispose of contents/container according to valid disposal regulations.
Pictogram	:	
Other hazards which do not result in classification	:	No data available

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	CAS No.	Concentration (%)
Light hydrocarbon distillates	64742-47-8	100

4. FIRST AID MEASURES

Necessary description

- **In case of eye contact** : Flush immediately with large amounts of water for at least 15 minutes. Seek medical advice if irritation continues.
- **In case of skin contact** : Remove contaminated clothing. Wash exposed area thoroughly with soap and water. Wash clothing before reuse. If irritation persists, seek medical attention.
- **If inhaled** : Remove to fresh air. If not breathing, give cardiopulmonary respiration. If breathing is difficult, give oxygen. Get medical attention.
- **If swallowed** : If swallowed, vomiting may occur spontaneously, but DO NOT INDUCE. If vomiting occurs, keep head below hips to prevent aspiration into lungs. Never give anything by mouth to an unconscious person. Call a physician immediately.

Most important symptoms/effects : No data available.

Indication of Immediate medical attention and special treatment needed, if necessary : No special treatment needed. Treat symptomatically.

5. FIRE-FIGHTING MEASURES

Suitable extinguishing media : Water spray, dry chemical powder, carbon dioxide (CO_2) and foam.

Unsuitable extinguishing media : Water jet.

Specific hazards

- **Other explosion and fire hazards** : No data available.

Flash point °C : 32 °C (90 °F)

Flammability value : No data available

Hazardous chemical decomposition : Smoke, fumes, and carbon dioxide.

Special protective actions for fire fighters

a. Water spray : Spray it to the base of fire from upwind.

b. Dry chemical powder : Spray it to the base of fire from upwind.

c. Carbon dioxide (CO_2) : Spray it to the base of fire from upwind.

d. Foam : When the fire is in a container, spray the foam into the inner wall of the container, not to the burning liquid, and from upwind. When the fire is caused by spill of liquid, spray it to the front fire until the spill is covered thoroughly, and from upwind.

Special protective equipment for fire-fighter : Fore fires in relatively closed areas, the fire fighters must be equipped with Self Contained Breathing Apparatus (SCBA).

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment, and emergency procedures : Put away all conditions that can enable the occurrence of ignition. Avoid direct contact to skin, eyes, and clothes. Evacuate all personnels to safe area. Be careful of vapor accumulation forming which causes explosive concentration. Use personal protective equipments. Ensure adequate ventilate .

Environmental precautions : Prevent spill into drainage, sewage system, or it seepage into the soil.

Procedures : Report spill according to the valid system and procedures. If spill can go into drainage or streams, do immediate report to the authority.

Methods and materials for containment and cleaning up : Adsorb the spill by using non combustible absorbents (sand and other absorbents). Clean and dispose it at the determined place of disposal according to the local regulation. Avoid further spillage and leakage if possible and safe to do so.

7. HANDLING AND STORAGE

Precautions for safe handling :
Avoid spillage.
Avoid contact with eyes.
Put in isolated place away from sources of ignition and open flames.
Use only in a well-ventilated area.

Conditions for safe storage (including any incompatibilities) :
Storage must be grounded or bound to avoid electrical static.
Keep away from combustible materials, flame, electrical or other sources of ignition.
Keep container closed in a dry and well-ventilated place.
Use steel carbon container.
Keep away from strong oxidizer.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

- **Exposure limit** :
  - OSHA PEL: 500 ppm (TWA)
  - ACGIH TLV : 100 ppm (TWA)
- **Biological exposure indicator** : No data available.

Appropriate engineering control

- **Ventilation** : Mechanical ventilation may be needed if this product used in a closed area. Contamination level in the air must be controlled under TLV of this product.
  Ventilation and equipments must be explosion proof.

Individual protection

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

measures

- **Eye and face protection** : Use chemical type goggles. Provide eye washer and emergency shower.
- **Skin protection** : Use PVC gloves or chemical gloves, full body cover, and chemical safety shoes.
- **Respiratory protection** : Use breathing apparatus with proper filter when accumulated vapor exists and its concentration exceeds TLV.
- **Hygiene practices** : Wash hand thoroughly after handling.
  Do not eat or drink when using this product.
  Do not smoke while using this product.

9. PHYSICAL AND CHEMICAL PROPERTIES

Characteristic		Test Result
Organoleptic (physical appearance, color, etc)	:	Liquid, colorless
Odor	:	Hydrocarbon
Odor threshold	:	No data available
pH	:	No data available
Melting/freezing point	:	No data available
Boiling point/boiling range	:	143 – 208 °C
Flammability	:	Flammable liquid
Flash point	:	32 °C
Evaporation rate	:	No data available
Lower/upper flammability limit and explosion limit	:	No data available
Vapor pressure	:	10 - 37 hPa at 37.8 °C*
Vapor density	:	No data available
Relative density	:	794.6 kg/m^3 at 15 °C
Solubility		
• **Water solubility**	:	No data available
• **Other solubility**	:	No data available
Partition coefficient (n-octanol/water)	:	-2.42
Auto-ignition temperature	:	220 - 250 °C at 101.325 kPa*
Decomposition temperature	:	No data available
Viscosity	:	1.077 cSt at 23 °C

*Data refers to ECHA Europe

10. STABILITY AND REACTIVITY

- **Reactivity** : Hazardous substance polymerization does not occur.
- **Chemical stability** : Stable under normal conditions. Unstable in hot places.
- **Posibility of hazardous reactions** : No hazardous reaction in normal condition.
- **Conditions to avoid** : Heat, flame, ignition or conditions that can cause static electricity.
- **Incompatible materials** : Strong oxidators.

10. STABILITY AND REACTIVITY

Hazardous decomposition products : Smoke, fumes, and carbon dioxide.

11. TOXICOLOGICAL INFORMATION

Comprehensive toxicological/health information

- **Acute toxicity** : Oral: No adverse effect observed LD50 5000 mg/kg bw.
  Inhalation: No adverse effect observed LC50 5280 mg/m³.
  Dermal: No adverse effect observed LD50 2000 mg/kg bw.
- **Skin corrosion/ irritation** : No data available. Suspected that it may cause skin corrosion/irritation according to compound or product which has similar structure or composition.
- **Serious eye damage/irritation** : No data available. Suspected that it may not cause serious eye damage or irritation according to compound or product which has similar structure or composition.
- **Respiratory or skin sensitization** : No data available. Suspected that it may not cause respiratory or skin sensitization according to compound or product which has similar structure or composition.
- **Germ cell mutagenicity** : No data available. Suspected that it is not mutagen according to compound or product which has similar structure or composition.
- **Carcinogenicity** : No data available. Suspected that it may not cause cancer according to compound or product which has similar structure or composition.
- **Reproductive toxicity** : Effect on fertility:
  Oral:
  No adverse effect observed NOAEL 1 500 mg/kg bw/day (subchronic, rat)
  Dermal:
  No adverse effect observed NOAEL 494 mg/kg bw/day (subchronic, rat)
  Inhalation:
  No adverse effect observed NOAEC 1 000 mg/m³ (subchronic, rat)
  Effect on developmental toxicity:
  Oral:
  No adverse effect observed NOAEL 1 000 mg/kg bw/day (subacute, rat)
- **STOT-single exposure** : No data available. Suspected that it is not toxic to specific organs after single exposure according to compound or product which has similar structure or composition.
- **STOT-repeated exposure** : Oral – systemic effects:
  No adverse effect observed NOAEL 750 mg/kg bw/day (subchronic, rat).
  Dermal – systemic effects:
  No adverse effect observed NOAEL 495 mg/kg bw/day (subchronic, rat).

11. TOXICOLOGICAL INFORMATION

Dermal – local effects:
Adverse effect observed LOAEL 1 mg/cm² (subchronic, rat).
Inhalation – systemic effects:
No adverse effect observed NOAEC 1000 mg/m³ (subchronic, rat).
Inhalation – local effects:
No adverse effect observed NOAEC 1000 mg/m³ (subchronic, rat).

- **Aspiration hazards** : May be fatal if swallowed and enters airways

Information on the likely routes exposure : Inhaled, ingested, skin contact, and eye contact.

Symptoms related to the physical, chemical, and toxicological characteristics : No data available. Further testing has not been done.

Delayed and immediate effects, and also chronic effects from both short or long term exposure : No data available. Further testing has not been done.

Numerical measure of toxicity : No data available. Further testing has not been done.

Interative effects : No data available. Further testing has not been done.

Where specific chemical data are not available : No data available. Further testing has not been done.

Mixture : No data available. Further testing has not been done.

Mixture vs. Ingredient information : No data available. Further testing has not been done.

Other in formation : No data available. Further testing has not been done.

12. ECOLOGICAL INFORMATION

Ecotoxicity : Short-term toxicity to:

- Fish: LL50 (4 days) 2 - 5 mg/L
- Aquatic invertebrates: EL50 (48 h) 1.4 mg/L

Long-term toxicity to aquatic invertebrates:
EL50 (21 days) 810 - 890 µg/L
Toxicity to algae:
EL50 (72 h) 1 - 3 mg/L

Persistence and degradability : No data available. Further testing has not been done.

Bioaccumulative potential : No data available. Further testing has not been done.

Mobility in soil : No data available. Further testing has not been done.

Other adverse effects : No data available. Further testing has not been done.

13. DISPOSAL CONSIDERATION

Disposal methods : The generation of waste should be avoided or minimized wherever possible. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. 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.

14. TRANSPORT INFORMATION

USA DOT

UN Number	:	UN1268
UN proper shipping name	:	-
Transport hazard class(es)	:	3
Packing group (if available)	:	III
Environmental hazard	:	-
Special precautions for user (UN Model Regulation)	:	-

RID / ADR

UN Number	:	UN1268
UN proper shipping name	:	-
Transport hazard class(es)	:	3
Packing group (if available)	:	III
Environmental hazard	:	-
Special precautions for user (UN Model Regulation)	:	-

IMO

UN Number	:	UN1268
UN proper shipping name	:	-
Transport hazard class(es)	:	3
Packing group (if available)	:	III
Environmental hazard	:	-
Special precautions for user	:	-

ICAO / IATA

UN Number	:	UN1268
UN proper shipping name	:	-
Transport hazard class(es)	:	3
Packing group (if available)	:	III
Environmental hazard	:	-
Special precautions for user (UN Model Regulation)	:	-

15. REGULATORY INFORMATION

Safety, health, and environmental regulation : - Peraturan Menteri Perindustrian Nomor 23/M-IND/PER/4/2013 tentang Perubahan Atas Peraturan

15. REGULATORY INFORMATION

(specific for the product in question)

Menteri Perindustrian Nomor 87/M-IND/PER/9/2009 Tentang Sistem Harmonisasi Global Klasifikasi dan Label pada Bahan Kimia

- Peraturan Pemerintah Republik Indonesia, Nomor 74 Tahun 2001 Tentang Pengelolaan Bahan Berbahaya dan Beracun Presiden Republik Indonesia
- Keputusan Menteri Tenaga Kerja No Kep-187/Men/1999 tentang Pengendalian Bahan Kimia Berbahaya
- Peraturan Menteri Kesehatan Republik Indonesia Nomor 70 Tahun 2016 tentang Standar dan Persyaratan Kesehatan Lingkungan Kerja Industri
- ACGIH®. 2016. TLVs® and BEIs®

16. OTHER INFORMATION

Revision date : 2017

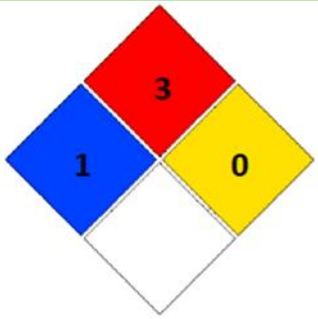
Key/legend or acronym used in the SDS : ACGIH® – The American Conference of Governmental Industrial Hygienists
ADR – European Agreement concerning the International Carriage of Dangerous Goods by Road
BEIs® – Biological Exposure Indices
CAS No. – Chemical Abstract Service Registry Number
ECHA – European Chemicals Agency
IATA – The International Air Transport Association
ICAO – The International Civil Aviation Organization
IMO – The International Maritime Organization
LOAEL – Lowest Observed Adverse Effect Level
NOAEL – No Observed Adverse Effect Level
NOAEC – No Observed Adverse Effect Concentration
PEL – Permissible Exposure Limit
PG – Packaging Group
PVC – Poly Vinile Chloride
RID – Regulation concerning the International Carriage of Dangerous Goods by Rail
SCBA – Self-Contained Breathing Apparatus
TLV – Threshold Limit Values
UN – United Nations
USA DOT – United States Department of Transportation

Key literature references and sources for data used in the SDS : echa.europa.eu

NFPA :

Degrees	Red	Blue	Yellow
0	Will not burn	Live ordinary material	Normally stable
1	Must be preheated to	Slightly hazardous	Unstable if heated – use

16. OTHER INFORMATION



	burn		normal precautions
2	Ignites when moderately heated	Hazardous – use breathing apparatus	Violent chemical change possible – use hose streams from distance
3	Ignites at normal temperatures	Extremely dangerous – use full protective clothing	Strong shock or heat may detonate - use monitors from behind explosion resistant barriers
4	Extremely flammable	Too dangerous to enter vapor or liquid	May detonate – vacate area if materials are exposed to fire

White	
	Radioactive
W	Never contact with water

Disclaimer

The information is composed based on current knowledge and intended to describe safety, health, and environment hazard of the product. Therefore, it should not be construed as guarantee any specific property of the product. All risks while using this product is the user's responsibility. It is not allowed to make change of this document, except there is legal consent.