1. IDENTIFICATION OF THE SUBSTANCE / PREPARATION AND COMPANY:

1.1 Product Name: WHITE SPIRIT / TURPENTINE SUBSTITUTE

1.2 Applications: General purpose cleaner, de-greaser & diluent for oil-based paints.

1.3 Supplier: Palace Chemicals Ltd; Speke Hall Industrial Estate, Speke; Liverpool; L24 1YA
Tel: 0151 486 6101; Fax 0151 448 1982
e-mail: sales@palacechemicals.co.uk; web: www.palacechemicals.co.uk

1.4 Emergency Telephone No.
Tel: 0151 486 6101 – Mon-Fri: 0800 - 1800

2. HAZARDS IDENTIFICATION:

2.1 Classification: H226 - Physical Flam. Liquid & vapour - Category 3
H411 - Environmental Aquatic Chronic 2

2.2 Label elements:

Key Word: DANGER
Hazard statements:
H226 - Flammable liquid and vapour.
H304 - May be fatal if swallowed and enters airways.
H411 - Toxic to aquatic life with long lasting effects.
H372 - Causes damage to organs through prolonged or repeated exposure
EUH066 - Repeated exposure may cause skin dryness or cracking.
H336 - May cause drowsiness or dizziness.

Precautionary statements:
P101 - If medical advice is needed, have product container or label at hand.
P210 - Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
P102 - Keep out of reach of children.
P103 - Read label before use.
P301+P310+P331 - IF SWALLOWED: Immediately call a POISON CENTRE or doctor. Do NOT induce vomiting.
P302/352 - IF ON SKIN: Wash with plenty of soap and water.
P304/340 - IF INHALED: Remove victim to fresh air and keep in a position comfortable for breathing.
P260 - Do not breathe vapours.
P262 - Do not get in eyes, on skin, or on clothing.
P233 Keep container tightly closed.
P240 Ground/bond container and receiving equipment.
P242 Use only non-sparking tools.
P243 Take precautionary measures against static discharge.
P273 Avoid release to the environment.
P280 Wear protective gloves/protective clothing/eye protection/face protection.
P303/361/353 IF ON SKIN Remove immediately all contaminated clothing.
Rinse skin with water/shower.
P303/361/353 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P403/235 Store in a well-ventilated place. Keep cool.

3. COMPOSITION / INFORMATION ON INGREDIENTS:

1. Substance: Contains less than 0.1% Benzene
Reach registration No. 01-2119458049-33-0007

<table>
<thead>
<tr>
<th>Name:</th>
<th>CAS No.:</th>
<th>EINECS No.:</th>
<th>Concentration:</th>
<th>Classification:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hydrocarbons, C9-C12, n-alkanes, isoalkanes, cyclics, aromatics (2-25%)</td>
<td>64742-82-1</td>
<td>919-446-0</td>
<td>100.0%</td>
<td>H226; H304; H411; EUH066; H336</td>
</tr>
</tbody>
</table>

4. FIRST AID MEASURES:

4.1 Description of measures:

**EYE CONTACT:** Irrigate thoroughly for 15 minutes with clean running water or a boric saline eye wash bottle. Seek medical attention should eye irritation persist or become inflamed.

**INHALATION:** Avoid working in a poorly ventilated, confined space. Remove to fresh air and rest. If irritation or breathing difficulties persist, seek medical attention.

**SKIN CONTACT:** Wash off skin with warm soapy water. Remove contaminated clothing and launder regularly. Prolonged and unattended contact should be avoided. Where irritation to skin is apparent seek medical attention.

**INGESTION:** Clean out mouth with copious volumes of water and drink plenty. Do not induce vomiting. Beware of aspiration if vomiting occurs. Seek prompt medical attention and show this data sheet
4.2 Acute & Chronic symptoms:

**Inhalation:**
Vapours inhaled in strong concentration have a narcotic effect on the central nervous system. Irritation of the respiratory tract due to excessive fumes causes headache, drowsiness or other effects to the central nervous system, loss of consciousness.

**Ingestion:**
Nausea, vomiting, abdominal pain.

**Skin contact:**
Prolonged or repeated contact may cause irritation and dry skin.

**Eye Contact:**
Burning feeling and temporary redness.

4.3 Immediate medical attention:
This will be needed to resolve the most severe risk which is through ingestion as the product may enter the lungs due to its low viscosity and lead to the rapid development of very serious inhalation pulmonary lesions (medical survey during 48 hours).

5. FIRE FIGHTING MEASURES:

5.1 Extinguishing media:
Dry powder; Foam, CO₂ – Do not use water jets.

5.2 Combustion Hazards:
Hazardous decomposition when subject to combustion – will produce noxious, irritating fumes.

5.3 Advice for fire-fighters:
Use approved self-contained breathing apparatus. Only use a fine water spray to cool down heat affected containers – not burning product. Cool containers exposed to flames with water until well after the fire is out. Keep run-off water out of sewers and water sources. Dike for water control.

6. ACCIDENTAL RELEASE MEASURES:

6.1 Personal protection:
Ventilate area and eliminate all sources of ignition. Wear personal protective equipment recommended in section 8.

6.2 Environmental precautions:
Do not allow spill to enter drains or watercourses. Form a dam with sand, earth or a boom. Absorb, bund and scrape spillages onto sand, sawdust or absorbent granules.

6.3 Spill removal methods:
Confine residues in clearly marked sealed containers for disposal in accordance with Local Authority regulations for flammable products – subject to special waste management controls.

6.4 References to other sections:
Wear protective clothing as described in Section 8 of this safety data sheet. See section 11 for additional information on health hazards. For waste disposal, see section 13.

7. HANDLING & STORAGE:

7.1 Safe handling precautions:
Eliminate all sources of ignition. Risk of vapour concentration on the floor and in low-lying areas. Static electricity and formation of sparks must be prevented. Use explosion proof electric equipment. Wear full protective clothing for prolonged exposure and/or high concentrations. Contaminated clothing and shoes must be discarded. Contaminated rags and cloths must be put in fireproof containers for disposal. Ventilate well, avoid breathing vapours. Use approved respirator if air contamination is above accepted level.

7.2 (a) Safe storage conditions:
Store in tightly closed original container in a dry, cool and well-ventilated place. Keep in original container. Take precautionary measures against static discharges.

7.2 (b) Incompatible materials:
Keep away from oxidisers, heat and flames. May attack some plastics, rubber and coatings.

7.3 Specific end uses:
The identified uses for this product are detailed in Section 1.2.

8. EXPOSURE CONTROLS & PERSONAL PROTECTION:

8.1 Control parameters

<table>
<thead>
<tr>
<th>Substance</th>
<th>8-hour exposure limit</th>
<th>15-minute exposure limit</th>
<th>Source Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>White Spirit</td>
<td>WEL– 350 mg/M3</td>
<td>STEL– 600mg/M3</td>
<td></td>
</tr>
</tbody>
</table>

DNEL’s - (Derived no effect levels) for workers:

<table>
<thead>
<tr>
<th>Exposure pattern</th>
<th>Route</th>
<th>DNEL</th>
<th>Dose descriptor</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acute systemic effects</td>
<td>Dermal</td>
<td>330 per 8 hours mg/m³</td>
<td>Industry</td>
</tr>
<tr>
<td>Acute systemic effects</td>
<td>Inhalation</td>
<td>11 per 24 hours mg/m³</td>
<td>Consumer</td>
</tr>
<tr>
<td>Acute Local effects</td>
<td>Dermal</td>
<td>71 per 8 hours mg/m³</td>
<td>Industry</td>
</tr>
<tr>
<td>Acute Local effects</td>
<td>Inhalation</td>
<td>26 mg/kg/day</td>
<td>Consumer</td>
</tr>
<tr>
<td>Long term systemic effects</td>
<td>Dermal</td>
<td>44 mg/kg/day</td>
<td>Industry</td>
</tr>
<tr>
<td>Long term systemic effects</td>
<td>Inhalation</td>
<td>26 mg/kg/day</td>
<td>Consumer</td>
</tr>
<tr>
<td>Long term local effects</td>
<td>Dermal</td>
<td>26 mg/kg/day</td>
<td>Consumer</td>
</tr>
<tr>
<td>Long term local effects</td>
<td>Inhalation</td>
<td>26 mg/kg/day</td>
<td>Consumer</td>
</tr>
</tbody>
</table>

PNEC’s - Predicted No effect concentration (Environment):

<table>
<thead>
<tr>
<th>Compartment</th>
<th>PNEC</th>
<th>Dose Descriptor</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fresh water</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sewage treatment</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
8.2 Exposure controls:
Engineering controls: Provide adequate general and local exhaust ventilation.
Respiratory protections: No specific recommendation is made, but appropriately specified respiratory protection must be used if the general level exceeds the recommended occupational exposure limit.
Hand protection: Protective gloves must be used. The most suitable glove must be chosen in consultation with the gloves supplier, who can inform about the breakthrough time of the glove material. Use protective gloves made of nitrile.
Eye protection: BS 2092 approved safety Goggles should be worn for all applications to help prevent accidental face/eye contact.

Other Protection: Wear appropriate clothing to prevent any possibility of liquid contact and repeated or prolonged vapour contact.

Hygiene measures: DO NOT SMOKE IN WORK AREA!
Wash at the end of each work shift and before eating, smoking and using the toilet. Promptly remove any clothing that becomes contaminated. Wash promptly with soap & water if skin becomes contaminated. Use appropriate skin cream to prevent drying of skin. When using do not eat, drink or smoke.

9. PHYSICAL & CHEMICAL PROPERTIES:

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appearance</td>
<td>Water white</td>
</tr>
<tr>
<td>Odour</td>
<td>Aromatic hydrocarbon</td>
</tr>
<tr>
<td>Odour threshold</td>
<td>Lower</td>
</tr>
<tr>
<td>pH</td>
<td>n/a</td>
</tr>
<tr>
<td>Flash point</td>
<td>39°C</td>
</tr>
<tr>
<td>Melting point</td>
<td>&lt; -20°C</td>
</tr>
<tr>
<td>Boiling point</td>
<td>150 – 200°C</td>
</tr>
<tr>
<td>Evaporation rate</td>
<td>65 (Et Et=1) – DIN 53170</td>
</tr>
<tr>
<td>Upper/Lower Flam limits</td>
<td>7.0% - 0.7%</td>
</tr>
<tr>
<td>Vapour pressure</td>
<td>&lt; 5 kPa 20</td>
</tr>
<tr>
<td>Vapour density</td>
<td>n/a</td>
</tr>
<tr>
<td>Relative density</td>
<td>0.775 – 0.795</td>
</tr>
<tr>
<td>Water solubility</td>
<td>Nil</td>
</tr>
<tr>
<td>Solubility in oils</td>
<td>100%</td>
</tr>
<tr>
<td>Partition coefficient (Kow)</td>
<td>n/a</td>
</tr>
<tr>
<td>Auto-ignition temperature</td>
<td>&gt;230</td>
</tr>
<tr>
<td>Decomposition temperature</td>
<td>n/a</td>
</tr>
<tr>
<td>Surface tension</td>
<td>0.0245 N/m @ 25 °C</td>
</tr>
<tr>
<td>Viscosity</td>
<td>0.95 m²/s 40</td>
</tr>
<tr>
<td>Explosive properties</td>
<td>May form explosive mixtures with air.</td>
</tr>
<tr>
<td>Oxidising properties</td>
<td>n/a</td>
</tr>
<tr>
<td>Particle size</td>
<td>n/a</td>
</tr>
</tbody>
</table>

10. STABILITY & REACTIVITY:

10.1 Conditions to avoid: Sources of ignition. Avoid static discharge.
10.2 Incompatible Materials: Acids & Oxidising agents
10.3 Decomposition hazards: Fire creates toxic fumes
10.4 Reactivity: Stable except when ignited
10.5 Chemical reactivity: Stable under the prescribed storage conditions.
10.6 Risk of hazardous reaction: None under normal use.

11. TOXICOLOGICAL INFORMATION:

11.1 Information on toxicological effects: This product has not been exhaustively tested. Judgements on the expected toxicity of this product have been made based upon consideration of its’ major components.

Routes of exposure: Inhalation, skin contact and ingestion.
Eye damage/irritation: Burning feeling and temporary redness.
Reproductive toxicity: n/a
STOT single exposure: Toxic dose 1 - LD 50 >5050 mg/kg (oral rat)
STOT repeat exposure: Target Organs - Central nervous system Respiratory system, lungs

Skin Corrosivity / Irritation: May cause de-fatting of the skin.
Respiratory/skin sensitisation: n/a
Germ cell Mutagenicity: n/a
Carcinogenicity: No evidence of carcinogenic properties
Aspiration hazard: The fluid can enter the lungs and cause damage (chemical pneumonitis, potentially fatal).
12. ECOLOGICAL INFORMATION:

12.1 Ecotoxicity: Acute Toxicity - Fish LC50 96 hours ~ 30 mg/l
12.2 Bio-accumulative potential: Negligible due to high volatility
12.3 Persistence & degradability: The substance is readily biodegradable.
12.4 Mobility in soil: 75% degradable in 28 days
12.5 PBT and vPvB result: Not Classified as PBT/vPvB
12.6 Other adverse effects: n/a

13. DISPOSAL CONSIDERATIONS:

13.1 Waste treatment Methods: Disposal to licensed waste disposal site in accordance with the local Waste Disposal Authority. Waste is suitable for incineration. Rags and the like, moistened with flammable liquids, must be discarded into designated fireproof bucket. Where possible packaging should be collected for reuse or recycling. When this product, in its liquid state, as supplied becomes waste it should be disposed of as hazardous waste using the waste code 08 01 11 waste paint and varnish containing organic solvents or other dangerous substances. Empty used containers should be disposed of as waste code 15 01 10 packaging containing residues of or contaminated by dangerous substances. When used the removed sludge should be disposed of using waste code 08 01 13 for paint & varnish sludge materials. Any absorbents used for clearing up soils should be disposed of using waste code 15 02 02, for absorbents contaminated by dangerous substances.

14. TRANSPORT INFORMATION:

Transport Labels:

Regulatory Code (Land, Sea & Air): ADR IMDG ICAO

| 14.1 UN No.: | 1300 1300 1300 |
| 14.2 Proper shipping name: | Turpentine Substitute Turpentine Substitute Turpentine Substitute |
| 14.3 ADR Packing Group: | III III III |
| 14.4 Transport Hazard Class: | 3 3 3 |
| 14.5 Environmental hazards: | Marine pollutant Marine pollutant Marine pollutant |
| 14.6 Special user precautions: | Emergency Action Code 3Y EMS F-E, S-E HAZCHEM CODE 3YE |
| 14.7 Transport in bulk – IBC code: | HAZARD No. (ADR) 33 Tunnel Restriction Code (D/E) |

15. REGULATORY INFORMATION:

15.1 Safety, health and environmental regulations / legislation specific for the substance or mixture
All components are listed as existing substances in Europe


Guidance Notes: Workplace Exposure Limits EH40. Introduction to Local Exhaust Ventilation HS(G)37. CHIP for everyone HSG(108).
EU Legislation:
Dangerous Substance Directive 67/548/EEC.

National Regulations:
Users of this product are reminded of their duties under the current Control of Substances Hazardous to Health Regulations and a suitable and sufficient assessment of all the risk should be undertaken before using this product. The guidelines given in the HSE publication COSHH ESSENTIALS - Easy Steps To Control Chemicals gives sound advice for deciding safe working control measures.

Authorisations (Title VII Regulation 1907/2006) - No specific authorisations are noted for this product.
Restrictions (Title VIII Regulation 1907/2006) - No specific restrictions of use are noted for this product.

15.2 Chemical safety assessment
A chemical safety assessment has not been carried out for this product.

16. OTHER INFORMATION:

<table>
<thead>
<tr>
<th>Last revision date:</th>
<th>23rd July 2019</th>
</tr>
</thead>
<tbody>
<tr>
<td>SDS No.:</td>
<td>101</td>
</tr>
</tbody>
</table>

List of abbreviations used in this SDS:
- CAS: Chemical abstracts service
- CLP: Classification, labelling & packaging regulation (EC) No. 1272/2008
- DPD: Dangerous Products Directive 1999/45/EC
- PBT: Persistent, Bio-accumulative & Toxic
- vPvB: Very Persistent, very Bio-accumulative

References:
- Volume VII Approved supply list; EH40; Croner; Bulk supplier data sheets

Classification methods:
- H Phrases in section 3:
  - H226 - Flammable liquid and vapour.
  - H304 - May be fatal if swallowed and enters airways.
  - H411 - Toxic to aquatic life with long lasting effects.
  - H066 - Repeated exposure may cause skin dryness or cracking.
  - H336 - May cause drowsiness or dizziness.
  - H372 - Causes damage to organs through prolonged or repeated exposure

Training for workers:
- Disclaimer:
The information supplied in this safety data sheet is intended to assist in the use of the above product without risk to safety and health and is based on current knowledge and experience of the associated physico-chemical hazards. The data does not signify any warranty with regard to the product’s properties. This information may be used to assist in formulating a COSHH risk assessment if applied at work. This data sheet complies with EC Directive 91/155EC.