PT. GLOBAL SEJAHTERA PERKASA

Material Safety Data Sheet

Section 1: Identification of the substance/ mixture and of the company/ undertaking

1.1 Product identifier

- Product name: **Indonesian Turpentine Oil**
- CAS Number: 8006-64-2

1.2 Relevant identified uses of the substance or mixture and uses advised against

Relevant identified uses: Manufacture, distribution, formulation & use of fragranced products, coatings and inks, solvents and solvent based products, adhesives and sealants, ancillary activities in application of coatings

Uses advised against: -

1.3 Details of the supplier of the safety data sheet

Manufacturer/supplier: PT Global Sejahtera Perkasa

Address: Jl Besar Namo Rambe Dusun I no 8
Sumatera Utara

Section 2: Hazards identification

2.1 Classification of the substance or mixture

According to Regulation (EC) No 1272/2008:

GHS02 flame

Flam. Liq. 3 H226: Flammable liquid and vapour

GHS08 health hazard

Asp.Tox. 1 H304: May be fatal if swallowed and enters airways

GHS09 environment

Aquatic Chronic 2 H411: Toxic to aquatic life with long lasting effects

GHS07

Eye Irrit. 2	H319: Causes serious eye irritation
Skin Irrit. 2	H315: Causes skin irritation
Skin Sens. 1	H317: May cause an allergic skin reaction
Acute Tox. 4	H332: Harmful if inhaled
Acute Tox. 4	H312: Harmful in contact with skin
Acute Tox. 4	H302: Harmful if swallowed

- According to Directive 67/548/EEC:

Xn; Harmful
R20/21/22-R65: Harmful by inhalation, in contact with skin and if swallowed. Harmful: May cause lung damage if swallowed.

N; Dangerous for the environment
R51-R53: Toxic to aquatic organisms. May cause long-term adverse effects in the aquatic environment.

R10: Flammable
R36/38: Irritating to eyes and skin
R43: May cause sensitization by skin contact

- Additional information: Full text of R- and H-phrases and EUH phrases: see section 16

2.2 Label elements

- Product identifier: Indonesian Gum Rosin X / WW /WG
- Pictogram:

GHS02 GHS08 GHS09 GHS07

- Signal 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
H319	Causes serious eye irritation
H315	Causes skin irritation
H317	May cause an allergic skin reaction
H332	Harmful if inhaled
H312	Harmful in contact with skin
H302	Harmful if swallowed

- Precautionary statements

P210	Keep away from heat/sparks/open flames/hot surfaces. — No smoking
P303+P361+P353	IF ON SKIN (or hair): Remove/Take off Immediately all contaminated clothing. Rinse SKIN with water/shower
P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, If present and easy to do. Continue rinsing.
P312	Call a POISON CENTER or doctor/physician if you feel unwell
P405	Store locked up
P501	Dispose of contents/container in accordance with local/regional/national/international regulations

2.3 Other hazards

- vPvB/ PBT assessment according to regulation (EC) No 1907/2006, Annex XIII: Not PBT and not vPvB
- Other hazards:-

Section 3: Composition / information on ingredients

3.1 Substances

Product name: Indonesian Turpentine Oil
EC number: 232-350-7
Index number: 650-002-00-6
REACH Registration Number: 01-2119553060-53-0001
CAS Number: 8006-64-2

3.2 Additional information: -

Section 4: First-aid measures

4.1 Description of first aid measures

- General notes: -
- Following inhalation: Move exposed person to fresh air. Keep person warm and at rest. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband. Get medical attention if adverse health effects persist or are severe. If unconscious, place in recovery position and get medical attention immediately
- Following skin contact: Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Wash contaminated clothing thoroughly with water before removing it, or wear gloves. Continue to rinse for at least 10 minutes. Get medical attention. In the event of any complaints or symptoms, avoid further exposure. Wash clothing before reuse. Clean shoes thoroughly before reuse
- Following eyes contact: Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Get medical attention if irritation occurs

- Following ingestion: Wash out mouth with water. Remove dentures if any. Move exposed person to fresh air. Keep person warm and at rest. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Get medical attention if adverse health effects persist or are severe. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.
- Note for the doctor: No specific treatment. Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.

Most important symptoms & effects both acute & delayed:

- Effects of short-term exposure: the vapour is irritating to the eyes, the skin and the respiratory tract. If this liquid is swallowed, aspiration into the lungs may result in chemical pneumonitis. The substance may cause effects on the central nervous system, bladder and kidneys, resulting in irritability, convulsions and kidney impairment. Exposure at high levels may result in tachycardia, unconsciousness, respiratory failure, death.
- Effects of long-term exposure: repeated or prolonged contact may cause skin sensitization. The liquid defats the skin.

4.2 Indication of any immediate medical attention and special treatment needed: -

Section 5: Fire-fighting measures

5.1 Extinguishing media

- Suitable extinguishing media: Use foam, dry chemical, or carbon dioxide for small fire. For larger fire, use water spray or fog.
- Unsuitable extinguishing media: Do not use water jet

5.2 Special hazards arising from the substance or mixture:

- Hazardous combustion products: On combustion, forms toxic fumes including carbon monoxide.

5.3 Advice for firefighters: if material on fire or involved in fire: Do not extinguish fire unless flow can be stopped or safely confined. Use water in flooding quantities as fog. Solid streams of water may spread fire. Cool all affected containers with flooding quantities of water. Apply water from as far a distance as possible.

5.4 Additional information: -

Section 6: Accidental release measures

6.1 Personal precautions, protective equipment & emergency procedures

- No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Eliminate all fire/ignition sources. Clean up spill as soon as possible using procedures described below. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment

6.2 Environmental precautions

- Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air)

6.3 Methods and material for containment and cleaning up

- Small spill: absorb with an inert material and put the spilled material in an appropriate waste disposal.
- Large spill: toxic flammable liquid, insoluble or very slightly soluble in water. Keep away from heat, from source of ignition. Stop leak if without risk. Absorb with dry earth, sand or other non-combustible material. Do not get water inside container. Do not touch spilled material. Prevent entry into sewers, basements or confined areas. Dispose of via a licensed waste disposal contractor
- *In situ* amelioration: there are a wide variety of sorbents, sinking agents, gelling agents, combustion promoters, dispersants, and mechanical systems to treat oil and resin spills. In addition, straw, polyurethane foam, activated carbon, and peat can be used to soak up resin.

6.4 Reference to other sections: 7, 8 & 13

6.5 Additional information: -

Section 7: Handling and storage

7.1 Precautions for safe handling

- Protective measures:
  - Measures to prevent fire: avoid any possible ignition points because they may cause fire hazards
  - Measures to prevent aerosol and dust generation: No special measures required
  - Measures to protect the environment: No special measures required
- Advice on general occupational hygiene: avoid direct contact with eyes and skin. Avoid inhalation. Wash hands before breaks and at end of work and use skin-protecting ointment. Keep working clothes separately. Use proper safety equipments as recommended on Section 8

7.2 Conditions for safe storage, including any incompatibility

- Technical measures and storage conditions: keep products in a dried and well ventilated room. Fireproof.
- Packaging material: -
- Requirements for storage rooms and vessels: keep container tightly sealed (and open container with care)
- Further information on storage conditions: Keep away from foodstuffs, drinks and tobacco. It must be kept away from strong oxidizing agents, oxidation catalysts, and sources of ignition and heat.

7.3 Specific end use(s)

- Recommendations: -
- Industrial sector specific solutions: -

Section 8: Exposure controls / personal protection

8.1 Control parameters:

- Endpoint-specific DNEL values for Turpentine oil: Worker

	Local	Systemic
Dermal	161 µg/cm² (acute)	25 mg/kg bw/day
Inhalation	NC	5.98 mg/m³ (long term)

- Endpoint-specific DNEL values for Turpentine oil: General Population

	Local	Systemic
Oral	NC	0.31 mg/kg bw/day (long term)
Dermal	81 µg/cm² (acute)	NC
Inhalation	NC	1.06 mg/m³ (long term)

NC: not calculated

- PNEC

PNEC aqua (freshwater): 8.8 µg/L
PNEC aqua (marine water): 0.88 µg/L
PNEC sediment (freshwater): 2.27 mg/kg sediment dw
PNEC sediment (marine water): 0.227 mg/kg sediment dw
PNEC soil: 0.45 mg/kg soil dw
PNEC STP: 6.6 mg/L

PNEC oral: 1.35 mg/kg food

- **8.2 Exposure control**
- Appropriate engineering measures: use process enclosures, local exhaust ventilation, or other engineering controls to keep airborne levels below recommended exposure limits.

Personal protection

- Eyes and face protection: For processes where the possibility for exposure arises, wear goggles. If there is a risk of liquid being splashed: Goggles and/or face shield.

- Hands/body protection: for processes where the possibility for exposure arises, wear gloves with available permeation data indicating that the material of construction offers good protection for the substance. Gloves should be selected according to the application and the duration of use at the work station. Observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves. Also take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion, and the contact time
- Respiratory protection: breathing protection.
- Thermal hazards: -

8.3 Environmental exposure controls:

- Product related measures to prevent exposure: -
- Instruction measures to prevent exposure: do NOT wash away into sewer
- Organizational measures to prevent exposure: -
- Technical measures to prevent exposure: -

Section 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance	Liquid, colorless	**Vapour density**	4.69
Odour	Characteristic	**Relative density (H_2O=1)**	0.867 at 20°C
Odour threshold	100 ppm	**Bulk density**	0.600 g/ml
pH	Not applicable	**Solubility(ies)**	25.5 mg/L at 20°C (water)
Melting point / freezing point	-60°C / -	**Partition coefficient (n-octanol/water)**	log K_{ow} = 4.49 at 20°C
Initial boiling point and boiling range	154°C - 170°C	**Auto-ignition temperature**	253°C
Flash point	34°C at 1013 hPa	**Decomposition temperature**	Not available
Evaporation rate	Not available	**Viscosity**	1.30 mPa.s at 25°C
Flammability (solid, gas)	Flammable liquid	**Explosive properties**	Not explosive
Upper/lower flammability or explosive limits	- / 0.8%	**Oxidizing properties**	Not oxidizing
Vapour pressure	519 Pa at 20°C		

9.2 Other safety information: -

Section 10: Stability and reactivity

10.1 Reactivity: -

10.2 Chemical stability

- Turpentine oil deteriorates by ozonizing

10.3 Possible hazardous reaction: see 10.5

10.4 Conditions to avoid: -

10.5 Incompatible materials

- Can react vigorously with oxidizing materials. Can also react violently with $Ca(OCl)_2$, chlorine, chromic acid, $Cr(OCl)_2$, $SnCl_4$, hexachloromelamine and trichloromelamine.

10.6 Hazardous decomposition products

- On combustion forms toxic fumes including carbon monoxide.
- The substance decomposes slowly under the influence of air or light producing oxidation products that are more toxic or irritating than turpentine itself.

Section 11: Toxicological information

11.1 Toxicokinetics, metabolism and distribution

- Non human toxicological data: not available
- Human toxicological data: not available

11.2 Information on toxicological effects

- Acute toxicity:

Method	Results	Reference
ORAL ADMINISTRATION		
rat (Wistar) male Method according to the typical testing for acute oral toxicity: 10 animals/dose by oral gavage	LD50: 3700 mg/kg bw (male) based on: test mat.	Moreno MO (1972a) Test material: 4,6,6-trimethylbicyclo[3.1.1]hept-3-ene
rat Method according to the typical testing for acute oral toxicity: 10 animals/dose by oral gavage	LD50: > 5000 mg/kg bw based on: test mat.	Moreno MO (1975) Test material: 6,6-Dimethyl-2-methylenebicyclo[3.1.1]heptane
rat (Wistar) male Method according to the typical testing for acute oral toxicity: 10 animals/dose by oral gavage	LD50: 4800 mg/kg bw (male) based on: test mat.	Moreno MO Test material: 3,7,7-trimethylbicyclo[4.1.0]hept-3-ene
rat (Wistar) male Method according to the typical testing for acute oral toxicity: 10 animals/dose by oral gavage	LD50: 3956 mg/kg bw (male) based on: test mat.	Moreno MO (1972b) Test material: Turpentine, oil
Rat Method according to the typical testing for acute oral toxicity in a limit test: 10 animals by oral gavage at one dose	LD50: > 5000 mg/kg bw based on: test mat.	Moreno MO (1974) Test material: 3,3-dimethyl-2-methylidenebicyclo[2.2.1]heptane

Method	Results	Reference
INHALATION		
rat male equivalent or similar to OECD Guideline 403 (Acute Inhalation Toxicity)	LC50 (4 h): 13.7 mg/L air (nominal) (male) based on: test mat.	Sperling F, Marcus WL and Collins C (1967) Test material: Turpentine, oil
mouse (Swiss Webster) male equivalent or similar to OECD Guideline 403 (Acute Inhalation Toxicity)	LC50 (2 h): 29 mg/L air (nominal) (male) based on: test mat. (25.6-32.8 mg/L)	Sperling F, Marcus WL and Collins C (1967) Test material: Turpentine, oil
DERMAL EXPOSURE		
rabbit (New Zealand White) Coverage: occlusive Method according to the typical testing for acute dermal toxicity in a limit test: topical application of substance on 10 rabbits at one selected dose.	LD50: > 5000 mg/kg bw based on: test mat.	Moreno MO (1972c) Test material: 4,6,6-trimethylbicyclo[3.1.1]hept-3-ene
Rabbit Method according to the typical testing for acute dermal toxicity in a limit test: topical application of substance on rabbits at selected doses.	LD50: > 5000 mg/kg bw based on: test mat.	Moreno MO (1975) Test material: 6,6-Dimethyl-2-methylenebicyclo[3.1.1]heptane
rabbit (New Zealand White) Coverage: occlusive Method according to the typical testing for acute dermal toxicity: topical application of substance on 10 rabbits at selected doses.	LD50: > 5000 mg/kg bw based on: test mat.	Moreno MO (1972d) Test material: 3,7,7-trimethylbicyclo[4.1.0]hept-3-ene
rabbit (New Zealand White) Coverage: occlusive Method according to the typical testing for acute dermal toxicity in a limit test: topical application of substance on 10 rabbits at one selected dose	LD50: > 2000 mg/kg bw based on: test mat.	Moreno MO (1972e) Test material: Turpentine, oil
Rabbit Method according to the typical testing for acute dermal toxicity: topical application of substance on rabbits at selected doses	LD50: > 2500 mg/kg bw based on: test mat.	Moreno MO (1974) Test material: 3,3-dimethyl-2-methylidenebicyclo[2.2.1]heptane

- Skin corrosion/irritation: irritant for skin
- Serious eye damage/irritation: irritant for eye
- Respiratory or skin sensitization: sensitising
- Germ cell mutagenicity: turpentine oil is not genotoxic or mutagenic
- Carcinogenicity: no available data
- Reproductive toxicity: no available data
- STOT-single exposure: no available data
- STOT-repeated exposure: no available data
- Aspiration hazard: no available data
- Further information: no available data

Section 12: Ecological information

12.1 Ecotoxicity:

Freshwater	mg/mL
LC50 for fish	29
EC50/LC50 for invertebrates	8.8
EC50/LC50 for algae	17.1
EC10/LC10 or NOEC for r algae	10
EC50/LC50 for aquatic micro-organisms	736
EC10/LC10 or NOEC for aquatic micro-organisms	10

12.2 Persistence and degradability: Biodegradation in water: readily biodegradable

12.3 Bioaccumulative potential: Aquatic BCF is 978.6 L/kgwwt (QSAR estimation), Log K_{ow} = 4.49

12.4 Mobility in soil: K_{oc} = 2547 (20°C) (QSAR estimation)

12.5 Results PBT &vPvB assessment: A detailed analysis of the Persistence, Bioaccumulation and Toxicity has been brought together into a clear conclusion on whether Turpentine oil is not a PBT/vPvB substance

12.6 Other adverse effects: -

Section 13: Disposal considerations

13.1 Waste treatment methods

- Product / Packaging disposal: -
- Waste codes / waste designations according to EWC / AVV: 14 06 03*
- Waste treatment relevant information: -
- Sewage disposal relevant information: do NOT wash away into sewer
- Other disposal recommendations: -

13.2 Additional information: Recycle any unused portion of the material for its approved use or return it to the manufacturer or supplier. Ultimate disposal of the chemical must consider: the material's impact on air quality; potential migration in soil or water; effects on animal, aquatic, and plant life; and conformance with environmental and public health regulations

Section 14: Transport information

- UN number: 1299
- UN proper shipping name: TURPENTINE
- Transport hazard class(es) and labels: 3
- Classification code: 3, flammable liquids
- Packing group: III
- Environmental hazards: environmentally hazardous
- Special precautions for user: -
- Transport in bulk according to annex II MARPOL 73/78 6 IBC Code:marine pollutant

Section 15: Regulatory information

15.1 Safety, health and environmental reg./leg. specific for the substance or mixture, authorization and/ or restrictions on use

- Authorization: Not applicable
- Restriction: Not applicable
- Other EU regulations: Not applicable
- Other national regulations: Not applicable

15.2 Chemical Safety Report: A Chemical Safety Assessment has been carried out

Section 16: Other information

To the best of our knowledge and belief, the information contained herein is accurate and obtained from sources believed to be reliable. No representation is made that the information is complete or the material is suitable for all purposes. The final determination as to the suitability of the user's intended use of the material is the sole responsibility of the user. All materials may present unknown hazards even when used in common applications and accordingly, it is the sole responsibility of the user to understand and address all potential hazards, including those identified herein. The information set forth in Sections 11 and 12 reflects data available as of the date hereof.

16.1 Indications of changes: General rewriting according to Regulations (EC) 1907/2006 & 1272/2008

16.2 Abbreviations and acronyms

AGS	AusschussfürGefahrstoffe	OEL	Occupational Exposure Limit
AVV	Abfallverzeichnisverordnung	OSHA	Occupational Safety and Health Administration
BCF	BioConcentration Factor	PBT	PersistantBioaccumulableToxique
CAS	Chemical Abstract Service	STOT	Specific Target Organ Toxicity
CSR	Chemical Safety Report	TCLo	Toxic Concentration Low
DFG	German Research Foundation	TDLo	Toxic Dose Low
DNEL	Derived No Effect Level	UN	United Nations
EC	European Commission	vPvB	very Persistent, very Bioaccumulative
EEC	European Economic Community	LC50	Lethal Concentration 50
EWC	European Waste Catalogue Code	LD50	Lethal Dose 50
IDLH	Immediately Dangerous to Life or Health	MARPOL	MARinePOLlution
IBC	International Bulk Chemical	Koc	Soil/Water Partition Coefficient
NIOSH	National Institute of Occupational Safety and Health	Kow	Octanol/Water Partition Coefficient
OECD	Organization for Economic Co-operation and Development	N°EC	European Commission number

16.3 Key literature references and sources of data

- http://bgia-online.hvbg.de/
- http://ecb.jrc.ec.europa.eu/esis/
- http://www.echemportal.org/
- http://www.cdc.gov/
- http://toxnet.nlm.nih.gov/
- http://www.ineris.fr/substances/fr/
- Chemical Safety Report of Gum Turpentine Oil

16.4 Classification and procedure used to derive the classification for mixtures according to Regulation (EC) 1272/2008: Classification procedure: on basis of test data

***16.5* Relevant R-phrases and/or H-statements** *(number and full text)*

- According to Regulation (EC) No 1272/2008

Xi	Irritant
Xn	Harmful
N	Dangerous for the environment
R10	Flammable
R20/21/22	Harmful by inhalation, in contact with skin and if swallowed
R36/38	Irritating to eyes and skin
R43	May cause sensitization by skin contact
R51	Toxic to aquatic organisms
R53	May cause long-term adverse effects in the aquatic environment
R65	Harmful: May cause lung damage if swallowed
S36/37	Wear suitable protective clothing and gloves
S46	If swallowed, seek medical advice immediately and show this container or label
S61	Avoid release to the environment. Refer to special instructions safety data sheet
S62	If swallowed, do not induce vomiting: seek medical advice immediately and show this container or label

- According to Directives 67/548/EEC

H226	Flammable liquid and vapour
H302	Harmful if swallowed
H304	May be fatal if swallowed and enters airways
H312	Harmful in contact with skin
H315	Causes skin irritation
H317	May cause an allergic skin reaction
H319	Causes serious eye irritation
H332	Harmful if inhaled
H411	Toxic to aquatic life with long lasting effects
P210	Keep away from heat/sparks/open flames/hot surfaces. — No smoking
P233	Keep container tightly closed
P240	Ground/bond container and receiving equipment
P241	Use explosion-proof electrical/ventilating/lighting/…/equipment
P242	Use only non-sparking tools
P243	Take precautionary measures against static discharge
P261	Avoid breathing dust/fume/gas/mist/vapours/spray
P264	Wash hands thoroughly after handling
P270	Do not eat, drink or smoke when using this product
P271	Use only outdoors or in a well-ventilated area
P272	Contaminated work clothing should not be allowed out of the workplace

P273	Avoid release to the environment
P280	Wear protective gloves/protective clothing/eye protection/face protection
P301+P310	IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician
P301+P312	IF SWALLOWED: call a POISON CENTER or doctor/physician IF you feel unwell
P302+P352	IF ON SKIN: wash with plenty of soap and water
P303+P361+P353	IF ON SKIN (or hair): Remove/Take off Immediately all contaminated clothing. Rinse SKIN with water/shower
P304+P340	IF INHALED: Remove victim to fresh air and Keep at rest in a position comfortable for breathing
P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, If present and easy to do. Continue rinsing.
P312	Call a POISON CENTER or doctor/physician if you feel unwell
P321	Specific treatment (see … on this label)
P322	Specific measures (see …on this label)
P330	Rinse mouth
P331	Do NOT induce vomiting
P332+P313	IF SKIN irritation occurs: Get medical advice/attention
P333+P313	IF SKIN irritation or rash occurs: Get medical advice/attention
P337+P313	IF eye irritation persists: Get medical advice/attention
P362	Take off contaminated clothing and wash before reuse
P363	Wash contaminated clothing before reuse
P391	Collect spillage. Hazardous to the aquatic environment
P370+P378	In case of fire: Use … for extinction
P403+P235	Store in a well-ventilated place. Keep cool
P405	Store locked up
P501	Dispose of contents/container to..…

16.6 Training advice: -

Annex : Exposure scenarios