SAFETY DATA SHEET

PERSTABIL

ACCORDING TO EC-REGULATIONS 1907/2006 (REACH), 1272/2008 (CLP) & 2020/878

1. SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1 Product identifier

Product Name	PERSTABIL
Alternative names	Tetrachloroethene; 1,1,2,2-Tetrachloroethene; perchloroethylene.
Chemical Name	Tetrachloroethylene
Chemical Formula	C_2Cl_4
CAS No.	127-18-4
EC No.	204-825-9
REACH Registration No.	01-2119475329-28-XXXX

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

Identified Use(s)	Chemical intermediate, Solvent.
Uses Advised Against	Not known.

1.3 Details of the supplier of the safety data sheet

Company Identification	INOVYN Trade Services SA
Address of Supplier	Rue Solvay 39 , 5190 Jemeppe-sur-Sambre Belgique
Telephone:	+ 32 71 26 81 11
E-mail	sds.ocd@inovyn.com
Office hours	09:00 – 17:00 CET

1.4 Emergency telephone number

Emergency Phone No.	+44(0)1235 239 670 (Europe); +1 215 207 0061 (Americas); +65 3158 1074 (Asia); +44 1235 239671 (Middle East)
Contact	CareChem

2. SECTION 2: HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

Regulation (EC) No. 1272/2008 (CLP)	Self classification: Skin Irrit. 2 :Causes skin irritation. Skin Sens. 1 :May cause an allergic skin reaction. Eye Irrit. 2 :Causes serious eye irritation. STOT SE 3 :May cause drowsiness or dizziness. Carc. 2 :Suspected of causing cancer. Aquatic Chronic 2 :Toxic to aquatic life with long lasting effects.

2.2 Label elements

	According to Regulation (EC) No. 1272/2008 (CLP)
Product Name	PERSTABIL

Hazard Pictogram(s)	 GHS08  GHS07  GHS09
Signal Word(s)	Warning
Hazard Statement(s)	H315: Causes skin irritation. H317: May cause an allergic skin reaction. H319: Causes serious eye irritation. H336: May cause drowsiness or dizziness. H351: Suspected of causing cancer. H411: Toxic to aquatic life with long lasting effects.
Precautionary Statement(s)	P201: Obtain special instructions before use. P261: Avoid breathing vapours. P280: Wear protective gloves/protective clothing/eye protection/face protection. P302+P352: IF ON SKIN: Wash with plenty of water. P305+P351+P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. P308+P313: IF exposed or concerned: Get medical advice/attention.
Additional label requirements	None.

2.3 Other hazards

None known.

2.4 Additional Information

For full text of H/P Statements see section 16.

3. SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances

HAZARDOUS INGREDIENT(S)	CAS No.	EC No. / REACH Registration No.	%W/W	Hazard Statement(s)	Hazard Pictogram(s)	Specific concentration limits; M-factor; ATE
Tetrachloroethylene, perchloroethylene	127-18-4	204-825-9 01-2119475329-28-XXXX	99 - 100	Skin Irrit. 2 H315 Skin Sens. 1B H317 Eye Irrit. 2 H319 STOT SE 3 H336 Carc. 2 H351 Aquatic Chronic 2 H411	GHS08 GHS07 GHS09	None.

3.2 Mixtures

Not applicable.

4. SECTION 4: FIRST AID MEASURES

4.1 Description of first aid measures

Inhalation	Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER/doctor if you feel unwell.
Skin Contact	Wash with plenty of water. Take off contaminated clothing and wash it before reuse. If skin irritation or rash occurs: Get medical advice/attention.
Eye Contact	Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.
Ingestion	Wash out mouth with water. Do not induce vomiting.

4.2 Most important symptoms and effects, both acute and delayed

Inhalation : High concentrations : May cause : Headache, Dizziness, Tiredness, Nausea, Vomiting. May cause damage to the central nervous system through repeated or prolonged exposure.

Skin Contact : Causes skin irritation. May cause an allergic skin reaction. Can be absorbed through the skin. Repeated exposure may cause skin dryness or cracking.

Eye Contact : Risk of temporary eye lesions.

Ingestion : Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhoea. May cause : Liver and kidney injuries

4.3 Indication of any immediate medical attention and special treatment needed

In the case of difficulty of opening the lids, administer an analgesic eye wash (oxybuprocaine). Obtain immediate medical attention. Medical examination necessary even only on suspicion of intoxication.

5. SECTION 5: FIREFIGHTING MEASURES

5.1 Extinguishing media

Suitable Extinguishing media	Water, Water spray, foam, dry powder or CO_2.
Unsuitable extinguishing media	None.

5.2 Special hazards arising from the substance or mixture

, Decomposes in a fire giving off toxic fumes: Hydrogen chloride gas, Phosgene, Carbon monoxide, chlorine

5.3 Advice for firefighters

Fire fighters should wear complete protective clothing including self-contained breathing apparatus. Dike fire control water for later disposal.

6. SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

Provide adequate ventilation. Ensure full personal protection (including respiratory protection) during removal of spillages. Stop leak if safe to do so. Cover the spreading liquid with foam in order to slow down the evaporation.

6.2 Environmental precautions

Avoid release to the environment. Spillages or uncontrolled discharges into watercourses must be alerted to the appropriate regulatory body.

6.3 Methods and material for containment and cleaning up

Adsorb spillages onto sand, earth or any suitable adsorbent material. Collect spillage. Transfer to a container for disposal. Earth may be shovelled to contain spillage and to avoid contamination of sewers and watercourses.

6.4 Reference to other sections

See Also Section 8, 13.

6.5 Additional Information

None.

7. SECTION 7: HANDLING AND STORAGE

7.1 Precautions for safe handling

Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Avoid breathing vapours. Use only outdoors or in a well-ventilated area. Contaminated work clothing should not be allowed out of the workplace. Wear protective gloves/protective clothing/eye protection/face protection. Wash hands and exposed skin after use.

7.2 Conditions for safe storage, including any incompatibilities

Store locked up. Store in a well-ventilated place. Keep container tightly closed. Appropriate packaging : Glass, Stainless steel, Steel (drums). Inappropriate packaging : Aluminium

Storage temperature	Ambient.
Storage life	Stable under normal conditions.
Incompatible materials	Oxidizing agents, strong bases, metal salts, plastic, Non iron metals (Aluminium, magnesium, Zinc)

7.3 Specific end use(s)

Contact supplier for further information.

8. SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

8.1.1 Occupational Exposure Limits

SUBSTANCE.	CAS No.	LTEL (8 hr TWA ppm)	LTEL (8 hr TWA mg/m³)	STEL (ppm)	STEL (mg/m³)	Note
Tetrachloroethylene, perchloroethylene	127-18-4	Check for country specific OELs Occupational Exposure Limits: EU, US, UK				

8.1.2 PNECs and DNELs

DNEL / DMEL	Oral	Inhalation	Dermal
Industry - Long Term - Local effects			
Industry - Long Term - Systemic effects		138 mg/m³	39.4 mg/kg
Industry - Short term - Local effects			
Industry - Short term - Systemic effects		275 mg/m³	
Consumer - Long Term - Local effects			
Consumer - Long Term - Systemic effects	1.3 mg/kg	0.25 mg/m³	0.167 mg/kg
Consumer - Short term - Local effects			
Consumer - Short term - Systemic effects		1.38 mg/m³	

Environment	PNEC
Aquatic Compartment (including sediment)	Fresh water : 0.051 mg/l Marine water : 0.0051 mg/l Fresh water (Sediment) : 0.903 mg/kg Marine water (Sediment) : 0.0903 mg/kg Intermittent release : 0.0364 mg/l
Terrestrial Compartment	Soil : 0.01 mg/kg Sewage treatment plant : 11.2 mg/l
Atmospheric Compartment	No data available.

8.2 Exposure controls

8.2.1. Appropriate engineering controls — Use with ventilation, local exhaust ventilation or breathing protection. A washing facility/water for eye and skin cleaning purposes should be present.

8.2.2. Personal protection equipment

Eye Protection — Wear eye protection with side protection (EN166). Good working practice suggests goggles should be worn.

Skin protection — Wear protective clothing and gloves: Impervious gloves (EN 374).
Suitable Materials:The following materials are suitable for protective gloves (permeation time >= 8 hours): Fluorocarbon rubber (0.4 mm),
Unsuitable gloves materials : PVC, Polyethylene, Neoprene, Nitrile rubber

Respiratory protection — Wear suitable respiratory protective equipment. Gas filtering respirator (DIN EN 14387). For high (or unknown) concentrations suitable respiratory equipment with positive air supply must be worn.

Thermal hazards — Not applicable.

8.2.3. Environmental Exposure Controls — Spillages or uncontrolled discharges into watercourses must be alerted to the appropriate regulatory body. Avoid release to the environment.

9. SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Physical state	Liquid.
Colour	Colourless.
Odour	Ether-like.
Melting point/freezing point	-22°C
Boiling point or initial boiling point and boiling range	121.4°C
Flammability	Non-flammable.
Lower and upper explosion limit	Not applicable.
Flash Point	Non-flammable.
Auto-ignition temperature	>650 °C
Decomposition Temperature (°C)	≥140 °C
pH	Not applicable.
Kinematic Viscosity	Not known.
Solubility	Solubility (Water) : 150 mg/l @ 25 °C Solubility (Other) : Soluble in: Organic solvents, grease.
Partition coefficient n-octanol/water (log value)	Log Pow : 2.53 @ 20 °C
Vapour pressure (Pa)	25 hPa @ 25 °C
Density and/or relative density (g/ml)	Relative density: 1.62 @ 20 °C
Relative vapour density	5.7
Particle characteristics	Not applicable.

9.2 Other information

Molecular weight	165.83 g/mol
Explosive properties	Not explosive.
Oxidising properties	Not oxidising.
Corrosivity	Non-corrosive
Odour threshold	27 ppm
Dynamic viscosity (mPa.s)	0.891 mPa•s @ 20 °C
Evaporation rate	Not known.
Surface tension	Not applicable.
Henry Constant	2100 Pa•m³/mol @ 20 °C Air , very volatile

10. SECTION 10: STABILITY AND REACTIVITY

10.1 Reactivity

May decompose on long exposure to light.

10.2 Chemical Stability

Stable under normal conditions.

10.3 Possibility of hazardous reactions

Strong oxidizers, alkali metals and alkaline earth metals may cause fires or explosions.

10.4 Conditions to avoid

Heat and direct sunlight.

10.5 Incompatible materials

Oxidizing agents, strong bases, metal salts, plastic, Non iron metals (Aluminium, magnesium, Zinc)

10.6 Hazardous decomposition products

Thermal decomposition will evolve: Hydrogen chloride gas, Phosgene, Carbon monoxide, chlorine

11. SECTION 11: TOXICOLOGICAL INFORMATION

11.1 Information on hazard classes as defined in Regulation (EC) No 1272/2008

Acute toxicity - Ingestion	Not classified. LD50 (male and female rats): 3005-3835 mg/kg
Acute toxicity - Skin Contact	Not classified. LC50 (24 hour) (rabbit): >10,000 mg/kg
Acute toxicity - Inhalation	Not classified. LC50 (4 hour) (rat) : 3786 ppm LC50 (4 hour) (mouse) : 2613 ppm
Skin corrosion/irritation	Causes skin irritation. historical human data.
Serious eye damage/irritation	Causes serious eye irritation. Based on Skin corrosion/irritation data.
Skin sensitization data	May cause an allergic skin reaction. Based on: LLNA Test result / data (mouse)
Respiratory sensitization data	Not classified. historical human data.
Germ cell mutagenicity	Not classified. Overall evidence from available in vitro and in vivo studies suggests that tetrachloroethylene is not mutagenic.
Carcinogenicity	Suspected of causing cancer. Inhalation LOAEL (male and female rats): 200 ppm LOAEL (male and female mouse): 100 ppm Inhalation (Target Organs: Kidneys): NOAEC: 138 mg/m³
Reproductive toxicity	Not classified. Toxicity to reproduction/Fertility NOAEL parent:(male and female rats): 100 ppm (m) NOAEL F1 (male and female rats): 1000 ppm (m) NOAEC (Inhalation): 6900 mg/m³ Developmental Toxicity , Teratogenicity Inhalation NOAEC Teratogenicity (rat) : 250 mg/kg NOAEC maternal (rat) : 250 mg/kg

Lactation	Not classified.
STOT - single exposure	May cause drowsiness or dizziness. historical human data.
STOT - repeated exposure	Not classified. Oral (Target Organs: Kidneys) LOAEL (mouse)(male)(78 week(s)): 540 mg/kg bw/day LOAEL (mouse)(female)(78 week(s)): 390 mg/kg bw/day Inhalation (Target Organs: Central nervous system) NOAEC: 138 mg/m³
Aspiration hazard	Not classified.

11.2 Information on other hazards

Not known.

12. SECTION 12: ECOLOGICAL INFORMATION

12.1 Toxicity

Toxic to aquatic life with long lasting effects.

Toxicity - Aquatic invertebrates	Daphnia magna (Water flea) EC50 (48 hour) : 8.5 mg/l NOEC (28 Days) : 0.51 mg/l
Toxicity - Fish	Acute Oncorhynchus mykiss (Rainbow trout) LC50 (96 hour) : 5 mg/l Chronic Jordanella floridae (flagfish) NOEC (10 Days) : 2.0 mg/l
Toxicity - Algae	Chlamydomonas reinhardii EC50 (72 hour) : 3.64 mg/l EC10 (72 hour) (Growth rate) : 1.77 mg/l
Toxicity - Sediment Compartment	Not classified.
Toxicity - Terrestrial Compartment	Toxicity to soil dwelling organisms Eisenia fetida (earthworms) LC50 (14 Days): 100-320 mg/kg NOEC (28 Days): ≤18 mg/kg Soil micro-organisms NOEC (28 Days) : ≤0.1 mg/kg

12.2 Persistence and Degradation

Abiotic Degradation

Indirect photo-oxidation, Air, Non-significant photolysis

Half-life indirect photolysis: 50d

Biodegradation
Ready biodegradability study: 0% -21d
Aerobic : Not readily biodegradable.

12.3 Bioaccumulative potential

Bioconcentration : Lepomis macrochirus (Bluegill sunfish)
Bioconcentration factor (BCF) : 49
The substance does not bioaccumulate.

12.4 Mobility in soil

Water: Significant evaporation and percolation

Soil, Sediment
KOC: 141
Log Koc : 2.15
Unlikely to absorb in soil.

Air
Henry Constant : 21 hPa.m³/mol @ 20 °C
very volatile

12.5 Results of PBT and vPvB assessment

Not classified as PBT or vPvB.

12.6 Endocrine disrupting properties

None known.

12.7 Other adverse effects

Microorganisms
Nitrosomonas sp.
IC50 (24 hour): 112 mg/l

13. SECTION 13: DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Refer to manufacturer/supplier for information on recovery/recycling. The organic ingredients can be incinerated in a suitable installation when in accordance with local regulations. Recover and reclaim or recycle, if practicable.

13.2 Additional Information

Disposal should be in accordance with local, state or national legislation.

14. SECTION 14: TRANSPORT INFORMATION

14.1 UN number or ID number

UN No. 1897

14.2 UN proper shipping name

UN proper shipping name TETRACHLOROETHYLENE

14.3 Transport hazard class(es)

ADR/RID Class	6.1
IMDG Class	6.1
IMDG EMS	Not available
ICAO/IATA	
Excepted Quantities	E1
Passenger and Cargo Aircraft Limited Quantities Packing Instructions	Y642
Passenger and Cargo Aircraft Limited Quantities Max net Qty	2 L
Passenger and Cargo Aircraft Packing Instructions	655
Passenger and Cargo Aircraft Max net Qty	60 L
Cargo Aircraft Packing Instructions	663
Cargo Aircraft Max net Qty	220 L
Special Provisions	Not applicable
Emergency Response Guidebook (ERG) Code	6L
ADR Classification Code	T1
ADR HIN	60
ADR Transport Category	2
Tunnel Restriction Code	E
Emergency Action Code	Not applicable
APP Advice on Additional Personal Protection (APP)	Not applicable

14.4 Packing group

Packing group	III
Labels	6.1

Special Provisions	Not applicable
Limited Quantities	5 L
Excepted Quantities	E1
Mixed Packing Instructions for Packages	P001 IBC03 LP01 R001
Special Packing Provisions for Packages	Not applicable
Mixed Packing Instructions for Packages	MP19

14.5 Environmental hazards

Environmental hazards	Classified as a Marine Pollutant.

14.6 Special precautions for user

Special precautions for user	Not known.

14.7 Maritime transport in bulk according to IMO instruments

Product Name	PERCHLOROETHYLENE
Ship Type	2
Pollution Category	Y
Packing Instructions for Portable Tanks	T4
Special Provisions for Portable Tanks	TP1
Tank Code for Tanks	L4BH
Special Provisions for Tanks	TU15 TE19
Vehicle for Tank Carriage	AT
Special Provisions for Carriage - Packages	V12
Special Provisions for Carriage - Bulk	Not applicable
Special Provisions for Carriage - Loading, Unloading and Handling	CV13 CV28
Special Provisions for Carriage - Operation	S9

15. SECTION 15: REGULATORY INFORMATION

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

European Regulations - Authorisations and/or Restrictions On Use	
Candidate List of Substances of Very High Concern for Authorisation	Not listed
REACH: ANNEX XIV list of substances subject to authorisation	Not listed
REACH: Annex XVII Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles	Tetrachloroethylene (Entry 3; 28)
Community Rolling Action Plan (CoRAP)	Tetrachloroethylene (127-18-4)
Regulation (EC) N° 850/2004 of the European Parliament and of the Council on persistent organic pollutants	Not listed
Regulation (EC) N° 2037/2000 on substances that deplete the ozone layer	Not listed
Regulation (EU) N° 649/2012 of the European Parliament and of the Council concerning the export and import of hazardous chemicals	Not listed
SEVESO SUBSTANCE (Directive 2012/18/EU)	Yes.

Seveso Code	Description	Lower Tier Qualifying quantity	Upper Tier Qualifying quantity
E2	ENVIRONMENTAL HAZARDS	200	500

National regulations

Germany	Wassergefährdungsklasse (WGK) Kenn-Numm : 287	WGK 3

15.2 Chemical Safety Assessment

A REACH chemical safety assessment has been carried out.

15.3 Inventory Status

Listed in: Australia (AICS), Canada (DSL/NDSL), China (IECSC), European Union (EINECS/ELINCS), Japan (ENCS), New Zealand Inventory (NZIoC), Philippines (PICCS), South Korea (KECI), Switzerland, Taiwan (NECI), Thailand, United States (TSCA) .

16. SECTION 16: OTHER INFORMATION

The following sections contain revisions or new statements: 1.3, 3.1, 8.1.2, 9.1, 9.2, 11.1, 11.2, 12.6, 12.7, 14, 15.1, 15.3.

LEGEND

Hazard Pictogram(s)

GHS08

GHS07

GHS09

Hazard Statement(s)

H315: Causes skin irritation.
H317: May cause an allergic skin reaction.
H319: Causes serious eye irritation.
H336: May cause drowsiness or dizziness.
H351: Suspected of causing cancer.
H411: Toxic to aquatic life with long lasting effects.

Precautionary Statement(s)

P201: Obtain special instructions before use.
P202: Do not handle until all safety precautions have been read and understood.
P261: Avoid breathing vapours.
P264: Wash hands and exposed skin thoroughly after handling.
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.
P281: Use personal protective equipment as required.
P302+P352: IF ON SKIN: Wash with plenty of water.
P304+P340: IF INHALED: Remove person to fresh air and keep 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.
P308+P313: IF exposed or concerned: Get medical advice/attention.
P312: Call a POISON CENTER/doctor if you feel unwell.
P321: Specific treatment (see on this label).

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+P364: Take off contaminated clothing and wash it before reuse.
P391: Collect spillage.
P403+P233: Store in a well-ventilated place. Keep container tightly closed.
P405: Store locked up.
P501: Dispose of this material and its container as hazardous waste.

Acronyms

ADN : European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways
ADR : European Agreement concerning the International Carriage of Dangerous Goods by Road
CAS : Chemical Abstracts Service
CLP : Regulation (EC) No 1272/2008 on classification, labelling and packaging of substances and mixtures
DNEL : Derived No Effect Level
EC : European Community
EINECS : European Inventory of Existing Commercial Chemical Substances
IATA : International Air Transport Association
IBC : Intermediate Bulk Container
ICAO : International Civil Aviation Organization
IMDG : International Maritime Dangerous Goods
LTEL : Long term exposure limit
PBT : Persistent, Bioaccumulative and Toxic
PNEC : Predicted No Effect Concentration
REACH : Registration, Evaluation, Authorisation and Restriction of Chemicals
RID : Regulations concerning the International Carriage of Dangerous Goods by Rail
STEL : Short term exposure limit
STOT : Specific Target Organ Toxicity
UN : United Nations
vPvB : very Persistent and very Bioaccumulative

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