SECTION 1: IDENTIFICATION OF THE SUBSTANCE OR PREPARATION AND THE COMPANY

1.1 Product Identifier

Product Name: Flexiline Tack Coat

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

Use of the substance/mixture: Thermoplastic road markings.
For industrial/professional use only.

Use advised against: No information available

1.3 Details of the supplier of the safety data sheet

Company Name: Polycote UK LLP
Centre Point
Wolseley Road
Woburn Road Industrial Estate
Kempston
Beds
MK42 7EF

Telephone Number: 01234 846400

Emergency Contact Number: 111 (NHS England)

Email address: uksales@polycote.com

SECTION 2: HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture:

Classication (REGULATION (EC) No 1272/2008) [CLP/GHS]: Flam. Aerosol 1, H222 - H229; STOT SE 3, H336; EUH066

Additional information: For full text of Hazard and EU Hazard statements: see section 16

Hazard pictograms:

Signal word: Danger

Hazard statements: H222 - Extremely -ammable aerosol.
H229 - Pressurised container: May burst if heated.
H336 - May cause drowsiness or dizziness.

Precautionary statements: P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P211 - Do not spray on an open -ame or other ignition source.
P251 - Pressurized container: Do not pierce or burn, even after use.
P261 - Avoid breathing fume/vapours
P403+P235 - Store in a well-ventilated place. Keep cool.
P410+P412 - Protect from sunlight. Do no expose to temperatures exceeding 50°C/ 122°F.

Supplemental Hazard information (EU): EUH066 - Repeated exposure may cause skin dryness or cracking.

2.3 Other hazards: Does not contain any substances with endocrine disrupting properties
Not a PBT according to REACH Annex XIII
Not a vPvB according to REACH Annex XIII

SECTION 3: COMPOSITION / INFORMATION ON INGREDIENTS

3.1 Substances: Not applicable

3.2 Mixtures

Contains the following hazardous ingredients or ingredients with a workplace exposure limit:

Chemical Name	Conc.	CAS No.	EC No.	Classification (REGULATION (EC) No 1272/2008) [CLP/GHS]	REACH Registration Number	SCL/ M-Factor/ ATE	WEL/ OEL
n-Butyl acetate	≥ 60%	123-86-4	204-658-1	Flam. Liq. 3, H226 STOT SE 3, H336 EUH066	-	-	Yes
Propane (< 0.1% 1,3-butadiene)	10 - 30%	74-98-6	200-827-9	Flam. Gas 1, H220 Press. Gas (Comp.), H280	01-2119486944-21-XXXX	-	No
Butane (< 0.1% 1,3-butadiene)	10 - 30%	106-97-8	203-448-7	Flam. Gas 1, H220 Press. Gas (Comp.), H280	01-2119474691-32-XXXX	-	Yes

SECTION 4: FIRST-AID MEASURES

No action shall be taken involving any personal risk or without suitable training
Rescuers should put on approved personal protective equipment (PPE) before administering first aid

SECTION 4: FIRST-AID MEASURES (continue)

4.1 Description of first aid measures:

Contact with eyes:	If substance has got into eyes, immediately wash out with plenty of water for at least 15 minutes Irrigate eyes thoroughly whilst lifting eyelids Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.
Contact with skin:	After contact with skin, take o immediately all contaminated clothing, and wash immediately with plenty of soap and water Take o contaminated clothing and wash it before reuse. If skin irritation or rash occurs: Get medical advice/attention.
Ingestion:	Rinse mouth. Give plenty of water to drink Never give anything by mouth to an unconscious person IF exposed or if you feel unwell: Call a POISON CENTER or doctor/physician.
Inhalation:	Remove person to fresh air and keep comfortable for breathing. Keep warm and at rest, in a half upright position. Loosen clothing Apply artificial respiration only if patient is not breathing but do not use mouth to mouth resuscitation If breathing is di cult, oxygen should be given by a trained person Get medical advice/attention.

4.2 Most important symptoms and effects, both acute and delayed

Contact with eyes:	May cause redness and irritation
Contact with skin:	May cause redness and irritation Repeated exposure may cause skin dryness or cracking
Ingestion:	May cause gastro-intestinal irritation May cause nausea/vomiting
Inhalation:	Vapours may cause drowsiness and dizziness May cause headache

4.3 Indication of any immediate medical attention and special treatment needed:

Treat symptomatically

SECTION 5: FIRE-FIGHTING MEASURES

5.1 Extinguishing media:

Suitable extinguishing media:	Alcohol resistant foam; dry powder; carbon dioxide; water spray; water fog; sand/earth
Unsuitable extinguishing media:	high volume water jet
5.2 Special hazards arising from the substance or mixture:	Extremely flammable aerosol. In a re or if heated, a pressure increase will occur and the container may burst May form explosive vapour/air mixtures Vapours are heavier than air and may travel considerable distances to a source of ignition and flashback Gives off irritating or toxic fumes (or gases) in a re. Decomposition products may include hydrocarbons Decomposition products may include carbon oxides
5.3 Advice for firefighters:	Evacuate the area and keep personnel upwind Fight fire remotely due to the risk of explosion. Keep container(s) exposed to fire cool, by spraying with water Collect contaminated fire extinguishing water separately. This MUST not be discharged into drains. Prevent fire extinguishing water from contaminating surface or ground water. Special protective equipment: Wear self-contained breathing apparatus (SCBA). Wear full protective clothing including chemical protection suit.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures:	Rescuers should take suitable precautions to avoid becoming casualties themselves No action shall be taken involving any personal risk or without suitable training Personal precautions for non-emergency personnel: Evacuate the area; Shut off all ignition sources; Avoid breathing vapours, mist or gas; Avoid contact with skin and eyes; Wash thoroughly after handling. Personal precautions for emergency responders: Evacuate the area and keep personnel upwind; Wear self-contained breathing apparatus (SCBA); Wear chemical protection suit; Butyl rubber or nitrile rubber is recommended; Wash thoroughly after dealing with spillage
6.2 Environmental precautions:	Do not allow to enter public sewers and watercourses If polluted water reaches drainage systems or water courses, immediately inform appropriate authorities
6.3 Methods and material for containment and cleaning up:	Stop leak if safe to do so. Do not allow to enter public sewers and watercourses Shut off all ignition sources Use non-sparking tools. Take action to prevent static discharges. Use explosion-proof electrical equipment.

SECTION 6: ACCIDENTAL RELEASE MEASURES (continue)	
Small spills:	Wipe up spillage with damp absorbent cloth or towel Place in appropriate container Remove contaminated material to safe location for subsequent disposal Wash spill site with water and detergent Wash thoroughly after dealing with spillage
Large spills:	Absorb spillage in suitable inert material Place in appropriate container Seal containers and label them Remove contaminated material to safe location for subsequent disposal To be disposed of as hazardous waste Seek expert advice for removal and disposal of all contaminated materials and wastes Wash thoroughly after dealing with spillage
6.4 Reference to other sections:	See section(s): 7, 8 & 13

SECTION 7: HANDLING AND STORAGE	
7.1 Precautions for safe handling:	Ensure adequate ventilation Use local exhaust ventilation and/or enclosures. Use non-sparking hand tools Use explosion-proof equipment. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Do not spray on an open flame or other ignition source. Wear protective clothing as per section 8 Use good personal hygiene practices Do not eat, drink or smoke when using this product. Wash thoroughly after handling. Take off contaminated clothing. Contaminated clothing should be laundered before reuse Eyewash bottles should be available
7.2 Conditions for safe storage, including any Incompatibilities:	Pressurised container: protect from sunlight and do not expose to temperatures exceeding 50 °C Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Store in a well-ventilated place. Keep cool. Keep away from food, drink and animal feeding stuffs Incompatible with strong acids Keep away from alkalis (strong bases) Incompatible with strong oxidizing substances
7.3 Specific end use(s)	A clear liquid tack coat primer designed for the adhesion of thermoplastic road markings onto non bituminous substrates.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters:

If this product contains ingredients with exposure limits, personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment.

Reference should be made to monitoring standards, such as the following: European Standard EN 689 (Workplace exposure - Measurement of exposure by inhalation to chemical agents - Strategy for testing compliance with occupational exposure limit values). European Standard EN 14042 (Workplace atmospheres. Guide for the application and use of procedures for the assessment of exposure to chemical and biological agents). European Standard EN 482 (Workplace exposure. General requirements for the performance of procedures for the measurement of chemical agents).

Reference to national guidance documents for methods for the determination of hazardous substances will also be required.

n-Butyl acetate:	(EU) IOELV (long term TWA) 50 ppm 241 mg/m³ (EU) IOELV (short term limit value) 150 ppm 723 mg/m³ WEL (long term) 150 ppm 724 mg/m³ (UK) WEL (short term limit value) 200 ppm 966 mg/m³ (UK) DNEL (inhalational) 48 mg/m³ Industry, Long Term, Systemic Effects DNEL (inhalational) 600 mg/m³ Industry, Acute/Short Term, Systemic Effects DNEL (inhalational) 300 mg/m³ Industry, Long Term, Local Effects DNEL (inhalational) 600 mg/m³ Industry, Acute/Short Term, Local Effects DNEL (dermal) 7 mg/kg (bw/day) Industry, Long Term, Systemic Effects DNEL (dermal) 11 mg/kg (bw/day) Industry, Acute/Short Term, Systemic Effects DNEL (inhalational) 12 mg/m³ Consumer, Long Term, Systemic Effects DNEL (inhalational) 300 mg/m³ Consumer, Acute/Short Term, Systemic Effects DNEL (inhalational) 35.7 mg/m³ Consumer, Long Term, Local Effects DNEL (inhalational) 300 mg/m³ Consumer, Acute/Short Term, Local Effects DNEL (dermal) 3.4 mg/kg (bw/day) Consumer, Long Term, Systemic Effects DNEL (dermal) 6 mg/kg (bw/day) Consumer, Acute/Short Term, Systemic Effects DNEL (oral) 2 mg/kg (bw/day) Consumer, Long Term, Systemic Effects DNEL (oral) 2 mg/kg (bw/day) Consumer, Acute/Short Term, Systemic Effects

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION (continue)

n-Butyl acetate:	PNEC aqua (freshwater) 180 µgg/L PNEC aqua (intermittent releases, freshwater) 360 µg/L PNEC aqua (marine water) 18 µg/L PNEC (STP) 35.6 mg/L PNEC sediment (freshwater) 981 µg/kg PNEC sediment (marine water) 98.1 µg/kg PNEC terrestrial (soil) 90.3 µg/kg
Propane:	No exposure limits have been set for this substance
Butane:	WEL (long term) 600 ppm 1450 mg/m³ (UK) WEL (short term) 750 ppm 1810 mg/m³ (UK)
8.2 Exposure controls:	Selection and use of personal protective equipment should be based on a risk assessment of exposure potential
Engineering controls:	Engineering controls should be provided to prevent the need for ventilation Use local exhaust ventilation and/or enclosures. Use explosion-proof ventilating and lighting equipment.
Respiratory protection:	In case of insufficient ventilation, wear suitable respiratory equipment Where a reusable half mask respirator is required, use EN 140, with gas/vapour filter EN 14387 type ABEK, or EN 405; EN 1827 Where a full-face mask respirator is required, use EN 136, with gas/vapour filter EN 14387 type ABEK
Skin protection:	Wear suitable protective clothing Wear protective gloves. The selected protective gloves have to satisfy the specifications of EU Directive 89/686/EEC and standard EN 374. The selection of a suitable glove depends on work conditions and whether the product is present on its own or in combination with other substances. Breakthrough time is dependent on the characteristics of the brand of glove used and the supplier should be consulted. Butyl rubber or nitrile rubber are recommended
Eye/face protection:	Wear goggles giving complete eye protection approved to standard EN 166. If necessary, wear face-shield approved to standard EN 166 1B39N
Thermal hazards:	Not applicable
Hygiene measures:	Do not eat, drink or smoke when using this product. Contaminated clothing should be laundered before reuse Use good personal hygiene practices Wash thoroughly after handling. Eyewash bottles should be available
Environmental exposure controls:	Avoid release to the environment. Do not allow to penetrate the ground/soil. Do not empty into drains

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Physical state:	Pressurized aerosol container containing flammable liquid
Colour:	Not applicable
Odour:	Sweet-smelling. Odour threshold (n-Butyl acetate) 7 - 20 ppm
Melting point/freezing point:	-90 °C (n-Butyl acetate)
Boiling point or initial boiling point and boiling range:	126 °C (n-Butyl acetate)
Flammability:	Extremely flammable aerosol.
Lower and upper explosion limit:	Lower explosive limit: (n-butyl acetate) 1.7 % (in air); Upper explosive limit: (n-butyl acetate) 7.6 % (in air)
Flash point:	Not applicable
Auto-ignition temperature:	415 °C (n-Butyl acetate) 287 - 537 °C (Propane/Butane)
Decomposition temperature:	No information available
pH:	Not applicable
Kinematic viscosity:	No information available
Solubility:	Solubility in water: 5.3 - 14 g/L @ 20 °C (n-Butyl acetate)
Partition coefficient n-octanol/water (log value):	1.82 - 2.3 @ 25 °C (n-Butyl acetate)
Vapour pressure:	11.2 - 16 hPa @ 20 °C (n-Butyl acetate)
Density and/or relative density:	0.879 - 0.881 @ 20 °C (n-Butyl acetate)
Relative vapour density:	4 (n-Butyl acetate)
Particle characteristics:	Not applicable

SECTION 10: STABILITY AND REACTIVITY

10.1 Reactivity:	Considered stable under normal conditions
10.2 Chemical stability:	Considered stable under normal conditions
10.3 Possibility of hazardous reactions:	Hazardous polymerisation will not occur under normal conditions of storage and use May form explosive vapour/air mixtures
10.4 Conditions to avoid:	Protect from sunlight. Do no expose to temperatures exceeding 50°C/ 122°F. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
10.5 Incompatible materials:	Incompatible with strong acids Incompatible with alkalis (strong bases) Incompatible with strong oxidizing substances
10.6 Hazardous decomposition products:	Decomposition products may include hydrocarbons Decomposition products may include carbon oxides

SECTION 11: TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects:

Acute Toxicity: Based on the available data, the classification criteria are not met

Substances:

Chemical Name	LD_{50} (oral, rat)	LD_{50} (inhalation, rat)	LD_{50} (dermal, rabbit)
n-Butyl acetate	10 768 mg/kg	(4 h) 390 ppm	17 600 mg/kg
Propane (< 0.1% 1,3-butadiene)	No data available	No data available	No data available
Butane (< 0.1% 1,3-butadiene)	No data available	(15 min) 1 442.738 - 1 443 mg/L	No data available

Skin corrosion/irritation: Based on the available data, the classification criteria are not met

Substances:

Chemical Name	Irritation/corrosion
n-Butyl acetate	No adverse effect observed (not irritating)
Propane (< 0.1% 1,3-butadiene)	No data available
Butane (< 0.1% 1,3-butadiene)	No adverse effect observed (not irritating)

Serious eye damage/irritation: Based on the available data, the classification criteria are not met

Substances:

Chemical Name	Irritation/corrosion
n-Butyl acetate	No adverse effect observed (not irritating)
Propane (< 0.1% 1,3-butadiene)	No data available
Butane (< 0.1% 1,3-butadiene)	No adverse effect observed (not irritating)

Respiratory or skin sensitisation: Based on the available data, the classification criteria are not met

Substances:

Chemical Name	Skin sensitisation	Respiratory sensitisation
n-Butyl acetate	No adverse effect observed (not sensitising)	No study available
Propane (< 0.1% 1,3-butadiene)	No data available	No data available
Butane (< 0.1% 1,3-butadiene)	No adverse effect observed (not sensitising)	No adverse effect observed (not sensitising)

Germ cell mutagenicity: Based on the available data, the classification criteria are not met

Substances:

Chemical Name	Toxicity - In Vitro	Toxicity - In Vivo
n-Butyl acetate	No adverse effect observed (negative)	No data available
Propane (< 0.1% 1,3-butadiene)	No data available	No data available
Butane (< 0.1% 1,3-butadiene)	No data available	No data available

Carcinogenicity: Based on available data, the classification criteria are not met
None of the components of the product/mixture present at levels greater than or equal to 0.1% are listed by NTP, IARC, ACGIH or OSHA as a carcinogen.

Substances:

Chemical Name	NOAEL (oral, rat)	NOAEL (inhalation, rat)	NOAEL (dermal, rat)
n-Butyl acetate	No data available	No data available	No data available

SECTION 11: TOXICOLOGICAL INFORMATION (continue)

Chemical Name	NOAEL (oral, rat)	NOAEL (inhalation, rat)	NOAEL (dermal, rat)
Propane (< 0.1% 1,3-butadiene)	No data available	No data available	No data available
Butane (< 0.1% 1,3-butadiene)	No data available	No data available	No data available

Reproductive toxicity: Based on the available data, the classification criteria are not met

Substances:

Chemical Name	NOAEL (oral, rat)	NOAEL (inhalation, rat)	NOAEL (dermal, rat)
n-Butyl acetate	No data available	640 mg/m³ (Effect on fertility) 7 230 mg/m³ (Effect on developmental toxicity)	No data available
Propane (< 0.1% 1,3-butadiene)	No data available	No data available	No data available
Butane (< 0.1% 1,3-butadiene)	No data available	No data available	No data available

Specific target organ toxicity (STOT) - single exposure: Has central nervous system effects
May cause drowsiness or dizziness.
Classification based on calculation and concentration thresholds

Substances:

Chemical Name	Route	Remarks
n-Butyl acetate	Respiratory	No adverse effect observed (not irritating) May cause drowsiness or dizziness.
Propane (< 0.1% 1,3-butadiene)	Respiratory	No data available
Butane (< 0.1% 1,3-butadiene)	Respiratory	No adverse effect observed (not irritating)

Specific target organ toxicity (STOT) - repeated exposure: Based on the available data, the classification criteria are not met

Substances:

Chemical Name	NOAEL (oral, rat)	NOAEL (inhalation, rat)	NOAEL (dermal, rat)
n-Butyl acetate	196 mg/kg bw/day	2 400 mg/m³ 500 ppm	No data available
Propane (< 0.1% 1,3-butadiene)	No data available	7.214 - 21.394 mg/L 4 000 - 16 000 ppm	No data available
Butane (< 0.1% 1,3-butadiene)	No data available	7.214 - 21.394 mg/L 4 000 - 16 000 ppm	No data available

Aspiration hazard: Based on the available data, the classification criteria are not met
Contact with eyes: May cause redness and irritation
Contact with skin: May cause redness and irritation
Repeated exposure may cause skin dryness or cracking
Ingestion: May cause gastro-intestinal irritation
May cause nausea/vomiting
Inhalation: Vapours may cause drowsiness and dizziness
May cause headache
11.2 Information on other hazards: Does not contain any substances with endocrine disrupting properties

SECTION 12: ECOLOGICAL INFORMATION

12.1 Toxicity Based on available data, the classification criteria are not met

Chemical Name	LC_{50} (fish)	EC_{50} (aquatic invertebrates)	EC_{50} (aquatic algae)
n-Butyl acetate	(4 days) 17 - 19 mg/L	24 h) 72.8 mg/L (48 h) 32 - 44 mg/L	
Propane (< 0.1% 1,3-butadiene)	No data available	No data available	No data available
Butane (< 0.1% 1,3-butadiene)	(4 days) 24.11 - 147.54 mg/L	LC_{50} (48 h) 14.22 - 69.43 mg/L	4 days) 7.71 - 19.37 mg/L

SECTION 12: ECOLOGICAL INFORMATION (continue)

12.2 Persistence and degradability Volatile portion is biodegradable

Chemical Name	Biodegradation
n-Butyl acetate	Readily biodegradable (100%)
Propane (< 0.1% 1,3-butadiene)	No data available
Butane (< 0.1% 1,3-butadiene)	No data available

12.3 Bioaccumulative potential: Bioaccumulation is not expected

Substances:

Chemical Name	Bioconcentration Factor (BCF)	Log Kow
n-Butyl acetate	15 (dimensionless)	1.82 - 2.3 @ 25 °C
Propane (< 0.1% 1,3-butadiene)	Low potential for bioaccumulation	No data available
Butane (< 0.1% 1,3-butadiene)	Low potential for bioaccumulation	No data available

12.4 Mobility in soil: Adsorption to solid soil phase is not expected

Chemical Name	Adsorption/desorption
n-Butyl acetate	Low potential for adsorption
Propane (< 0.1% 1,3-butadiene)	Low potential for adsorption
Butane (< 0.1% 1,3-butadiene)	Low potential for adsorption

12.5 Results of PBT and vPvB assessment: Not a PBT according to REACH Annex XIII
Not a vPvB according to REACH Annex XIII

12.6 Endocrine disrupting properties: No information available

12.7 Other adverse e□ects: No information available

SECTION 13: DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods Disposal should be in accordance with local, state or national legislation
Dispose of contents/container to an authorised waste collection point
This material and/or its container must be disposed of as hazardous waste
Empty containers may contain flammable vapours
Do not pierce or burn container, even after use
Avoid release to the environment.

13.2 Classification: The waste must be identified according to the List of Wastes (2000/532/EC)
Hazardous Property Code(s): HP 3 Flammable; HP 5 Specific Target Organ Toxicity (STOT)/Aspiration Toxicity

EWC Code: Residues/unused product 20 01 27* - paint, inks, adhesives and resins containing dangerous substances
Packaging 16 05 04* gases in pressure containers (including halons) containing hazardous substances

SECTION 14: TRANSPORT INFORMATION

Hazard pictograms:

14.1 UN number: UN1950

14.2 UN proper shipping name: AEROSOLS

14.3 Transport Hazard Class(es):
Hazard 2

14.4 Packing Group: Not applicable

14.5 Environmental hazards: Not classified

14.6 Special precautions for user: No information available

14.7 Maritime transport in bulk according to IMO instruments: Not applicable

14.8 Road/Rail (ADR/RID)
ADR UN No.: 1950
Proper Shipping Name: AEROSOLS
ADR Hazard Class: 2
ADR Packing Group: Not applicable
Tunnel Code: D

14.9 Sea (IMDG)
IMDG UN No.: 1950
Proper Shipping Name: AEROSOLS
IMDG Hazard Class: 2.1
IMDG Packing Group.: Not applicable

SECTION 14: TRANSPORT INFORMATION (continue)	
14.10 Air (ICAO/IATA)	ICAO UN No.: 1950 Proper Shipping Name: AEROSOLS, FLAMMABLE ICAO Hazard Class: 2.1 ICAO Packing Group: Not applicable

SECTION 15: REGULATORY INFORMATION

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

This safety data sheet is provided in compliance with REACH Regulation (EC) No 1907/2006 (as amended by Regulation (EU) 2020/878) and UK REACH The GB Classification, Labelling and Packaging Regulation (GB CLP) applies in Great Britain Regulation (EC) No. 1272/2008 on the classification, labelling and packaging of substances and mixtures (CLP Regulation) applies in Europe
This product is covered by EU Directive 2012/18/EU (the Seveso III Directive)
This product is covered by the Aerosol Dispensers Directive (2008/47/EC)
Restrictions on use according to Annex XVII to REACH Regulation: N/A

15.2. Chemical safety assessment: No information available

SECTION 16: OTHER INFORMATION	
Training advice:	Workers must be informed of the presence of hazardous ingredients and trained in the proper use and handling of this product as required under applicable regulations
Classification and procedure used to derive the classification for mixtures according to Regulation (EC) 1272/2008 [CLP]:	Flam. Aerosol 1, H222 - H229: Classification based on calculation and concentration thresholds STOT SE 3, H336: Classification based on calculation and concentration thresholds