## SECTION 1: Identification of the substance/mixture and of the company/undertaking

**1.1 Product identifiers**

Product name : ProSafe Rn/AB
Product number : PSRn/AB
Brand : Meridian Biotechnologies Ltd
REACH NO. : A registration number is not available for this mixture. All the substances used within the mixture are either; Pre-REACH registered, fully REACH Registered, exempt from registration or the annual tonnage does not require registration.

**Unique Formula Identifier Code: 6S00-00QC-K000-TTHE**

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

Sector of Use: SU24 Scientific Research and Development ONLY. Not for consumer use
Application of the substance / the mixture: Liquid Scintillation Cocktail.

**1.3 Details of the supplier of the safety data sheet**

**Manufacturer** Meridian Biotechnologies Ltd, Unit 6,
Epsom Downs Metro Centre,
Waterfield, Tadworth, Surrey KT20 5LR
United Kingdom
**Telephone** : +44 (0) 20 8397 8316 (Monday – Friday 9am-5pm)
**E-mail address** : info@meridian-biotech.com

**1.4 Emergency telephone numbers**

**During normal opening times: +44 (0) 20 8397 8316 (Monday– Friday 9am-5pm).**
**After hours call: +44 (0) 7971000273.**

**Poison Information Service**

| Country | Language | Poison Centre | Phone | Website |
|---|---|---|---|---|
| UK | English | National Poisons Information Service NHS | +44 (0) 344 892 0111 -Healthcare Professionals ONLY<br>111 – General public | https://www.npis.org/Industrynotify.html<br>https://www.nhs.uk/nhs-services/ |

## SECTION 2: Hazards Identification

**2.1 Classification of the substance or mixture**

**Classification according to Regulation (EC) No 1272/2008**

| | | |
|---|---|---|
| Aspiration Toxicity | Category 1 | H304 |
| Skin Irritation | Category 2 | H315 |
| Eye Irritation | Category 2 | H319 |
| Aquatic Toxicity | Chronic 1 | H410 |

For the full text of the H-Statements mentioned here - see section 16

**2.2 Label elements**

**Labelling according to Regulation (EC) No 1272/2008**

**Hazard pictograms**


**GHS07**


**GHS08**


**GHS09**

**Signal word** Danger

***Cont…***

Contains Di-isopropylnaphthalene isomers and 1,2,4 -Trimethylbenzene

**Hazard statements**

| | |
|---|---|
| H304 | May be fatal if swallowed and enters airways. |
| H315 | Causes skin irritation. |
| H319 | Causes serious eye irritation. |
| H410 | Very toxic to aquatic life with long lasting effects. |

**Precautionary statements**

| | |
|---|---|
| P280 | Wear protective gloves/protective clothing/eye protection/face protection. |
| 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 person to fresh air and keep comfortable for breathing. |
| P301+P330+P331 | IF SWALLOWED: Rinse mouth. DO NOT INDUCE VOMITING. |
| P305+P351+P338 | IF IN EYES: Rinse continuously with water for several minutes. Remove contact lenses if present and easy to do – continue rinsing. |
| P501 | Dispose of contents / container in accordance with local/national regulations. |

**2.3 Other hazards**

**Results of PBT and vPvB assessment**
This product contains di-isopropylnaphthalene isomers (CAS # 38640-62-9) and should be handled accordingly as if it were a PBT/vPvB.

**Endocrine Disrupting Properties**
This product does not contain any substances with endocrine disrupting properties.

## SECTION 3: Composition / Information on Ingredients

**3.1 Chemical characterisation: Mixtures**
**Description:** Mixture of substances listed below with non-hazardous additions.

**Hazardous components:**

| | | | | | |
|---|---|---|---|---|---|
| **Di-isopropylnaphthalene isomers** | | | | | |
| CAS #: 38640-62-9<br>EC NUMBER: 254-052-6<br>REACH: 01-2119565150-48-XXXX | Aspiration Toxicity category 1<br>Chronic aquatic 1 | H304<br>H410 | 60-90% | ATE:<br>M Factor:<br>SCL: | N/A<br>=1<br>N/A |
| **1,2,4 -Trimethylbenzene** | | | | | |
| CAS #: 95-63-6<br>EC #: 202-436-9<br>REACH: 01-21194-72135-42-XXXX | Flammable liquid category 3<br>Skin irritation category 2<br>Eye irritation category 2<br>Acute toxicity inhalation category 4<br>Specific Target Organ Toxicity - Single Exposure, Respiratory category 3<br>Chronic aquatic category 2 | H226<br>H315<br>H319<br>H332<br>H335<br><br>H411 | 15-30% | ATE:<br>M Factor:<br>SCL: | N/A<br>N/A<br>N/A |

For the full text of the H-Statements mentioned here - see section 16

## SECTION 4: First Aid Measures

**4.1 Description of first aid measures**

**General information:** Consult a doctor. Show this safety data sheet to the doctor in attendance.

**If inhaled:** Move person into fresh air.

**In case of contact with skin contact:** Wash off with plenty of water.

**In case of eye contact:** Rinse thoroughly with plenty of water for at least 15 minutes and consult a doctor. Protect unharmed eye.

**If swallowed:** Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Call for a doctor immediately.

**4.2 Most important symptoms and effects, both acute and delayed**

No further relevant information available.

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

No further relevant information available.

## SECTION 5: Fire Fighting Measures

**5.1 Extinguishing media**

**Suitable extinguishing agents:** Carbon Dioxide, dry powder or water spray.
Fight larger fires with water spray or alcohol resistant foam.

**5.2 Special hazards arising from the substance or mixture**

No further relevant information available.

**5.3 Advice for fire-fighters**

**Special Protective equipment:** Wear self-contained respiratory protective device.
Wear fully protective suit.

**Further Information:** Cool closed containers exposed to fire with water spray.
Contaminated water must not be discharged into drains.

## SECTION 6: Accidental Release Measures

**6.1 Personal precautions, protective equipment and emergency procedures**

**Personal precautions:** Use personal protective equipment. Keep unprotected persons away.

**Special precautions:** Not applicable.

**6.2 Environmental precautions**

**Environmental precautions:** Inform respective authorities in case of seepage into water course.
Do not allow to enter surface or ground water.
Dilute with plenty of water.

**6.3 Methods and material for containment and cleaning up**

**Methods for cleaning up:** Absorb with liquid binding material (sand, diatomite, acid binders, universal binders, sawdust).
Ensure adequate ventilation.
Pick up mechanically
Dispose of according to local regulations (see section 13).

**6.4 Reference to other sections**

See Section 7 for information on safe handling.
See Section 8 for information on personal protection equipment.
See Section 13 for disposal information.

## SECTION 7: Handling and Storage

**7.1 Precautions for safe handling**

**Advice on safe handling:**
Wear personal protective equipment.
Avoid contact with skin and eyes.
Avoid inhalation of vapour or mist.
Ensure good ventilation/exhaustion at the workplace.
Prevent formation of aerosols.

**Information about fire and explosion protection:**
Keep away from sources of ignition.
Do not smoke.

**7.2 Conditions for safe storage, including any incompatibilities**

**Requirements to be met by storerooms and receptacles:** No special requirements.
**Information about storage in one common storage facility:** Not required.
**Further information about storage conditions:** Keep container tightly sealed.
Protect from exposure to the light.

**7.3 Specific end use(s):**
Advised temperature of use: 15-25°C
Uses identified and documented.

## SECTION 8: Exposure Controls / Personal Protection

**8.1 Control parameters**

**Components with workplace control parameters:**

| Component | CAS number | Exposure | Value | Control Parameter |
|---|---|---|---|---|
| Di-isopropylnaphthalene isomers | 38640-62-9 | DNEL | long term | 2.1 mg/kg/d ORAL<br>2.1 mg/kg/d DERMAL<br>7.4 mg/kg/d INHALATION |

| Component | CAS number | | Limit values | | | |
|---|---|---|---|---|---|---|
| | | | Eight hours | | Short-term | |
| | | Country | ppm | mg/m³ | ppm | mg/m³ |
| 1,2,4 -Trimethylbenzene | 95-63-6 | UK | 25 | 125 | | |
| | | EU | 20 | 100 | | |
| | | France | 20 | 100 | | |
| | | Germany | 20 | 100 | 40 | 200 |
| | | Netherlands | | 100 | | 200 |
| | | Slovakia | | | | |
| | | Finland | | | | |
| | | Poland | | 100 | | 170 |
| | | Hungary | | 100 | | |
| | | Belgium | 20 | 100 | | |
| | | Spain | 20 | 100 | | |
| | | Romania | 20 | 100 | | |
| | | Lithuania | | | | |

**8.2 Exposure controls**

**General protective and hygienic measures:**
Handle in accordance with good industrial hygiene and safety practice.
Immediately remove all soiled and contaminated clothing.
Wash hands before breaks and at the end of work.
Avoid contact with the eyes and skin.
Avoid inhalation of vapour or mist.
Do not eat, drink, smoke or sniff while working.

*Cont…*

| | |
|---|---|
| **Personal Protective Equipment:** | Wear suitable gloves, body and eye protection and a face shield. |
| **Respiratory protection:** | No personal respiratory protective equipment normally required. |
| **Skin protection:** | Handle with protective gloves. The glove material has to be impermeable and resistant to the product/ the substance/ the preparation. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands. The selected protective gloves have to satisfy the specifications of EU Directive 89/686/EEC and the standard EN 374 derived from it. Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation. |
| **Splash contact** | Material: Nitrile-rubber. Minimum layer thickness: 0.4 mm, Break through time: 240 min. If used in solution, or mixed with other substances, and under conditions which differ from EN 374, contact the supplier of the CE approved gloves. This recommendation is advisory only and must be evaluated by an industrial hygienist and safety officer familiar with the specific situation of anticipated use by our customers. It should not be construed as offering an approval for any specific use scenario. |
| **Eye / face protection:** | Tightly fitting safety goggles. Face shield (8-inch minimum). Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH(Us) or EN 166(EU). |
| **Body protection**: | Protective work clothing – complete suit protecting against chemicals. The type of protective clothing must be selected according to the concentration and amount of the dangerous substance at the specified workplace. |
| **Control of environmental exposure** | Prevent further leakage or spillage if safe to do so. Do not let product enter drains. |

## SECTION 9: Physical and Chemical Properties

**9.1 Information on basic physical and chemical properties**

| | |
|---|---|
| **Physical state:** | Liquid |
| **Form:** | Liquid |
| **Colour:** | Colourless |
| **Odour:** | Characteristic |
| **Odour threshold:** | Not determined |
| **pH-value:** | Not determined |
| **Melting point/Melting range:** | Not determined |
| **Boiling point/Boiling range:** | Not determined |
| **Flash point:** | 74°C |
| **Flammability (solid, gaseous):** | Not applicable |
| **Ignition temperature:** | Not determined |
| **Self-igniting:** | Product is not self-igniting |
| **Danger of explosion:** | Product does not present an explosion hazard |
| **Explosion Limits:** | Not determined |
| **Vapour pressure:** | Not determined |
| **Density at 20 °C:** | 0.95 gm/cm$^3$ |
| **Relative density** | Not determined |
| **Vapour density** | Not determined |
| **Evaporation rate** | Not determined |
| **Solubility in water:** | Not soluble in water |
| **Particle size** | NA |
| **Partition coefficient (n-octanol/water):** | Not determined |
| **Viscosity:** | |
| **Dynamic:** | Not determined |
| **Kinematic:** | Not determined |

***Cont…***

**9.2 Other information** No further relevant information available
**Information with regard to physical hazard class:** No additional information
**Other Safety Characteristics:** No additional information

## SECTION 10: Stability and Reactivity

**10.1 Reactivity:** No data available

**10.2 Chemical stability** Stable under recommended storage conditions.

**10.3 Possibility of hazardous reactions:** No decomposition if used according to specifications.

**10.4 Conditions to avoid** Toxic fumes may be released if heated above decomposition point

**10.5 Incompatible materials:** No further relevant information available.

**10.6 Hazardous decomposition products**: Combustion can produce oxides of carbon, carbon monoxide and carbon dioxide.

## SECTION 11: Toxicological Information

**11.1 Information on toxicological effects**

| Component | CAS Number | LC50/ LD50 Values |
|---|---|---|
| 1,2,4 -Trimethylbenzene | 95-63-6 | 18 mg/l (rat) INHALATION<br>5,000 mg/kg (rat) ORAL |
| Di-isopropylnaphthalene isomers | 38640-62-9 | >4,000 mg/kg (rat) ORAL<br>>4,000 mg/kg (rat) DERMAL<br>>5.6 mg/l (rat) INHALATION |

**Acute toxicity:**
**Skin corrosion / irritation:** Causes skin irritation.
**Serious eye damage / eye irritation:** Causes eye irritation.
**Respiratory sensitisation:** Causes respiratory irritation.
**Germ cell mutagenicity:** Based on available data, classification criteria not met.
**Carcinogenicity:** Based on available data, classification criteria not met.
**Reproductive toxicity:** Based on available data, classification criteria not met.
**Specific Target Organ Toxicity – Single Exposure:** Respiratory irritation.
**Specific Target Organ Toxicity – Repeated Exposure:** Based on available data, classification criteria not met.
**Aspiration hazard:** May be fatal if swallowed and enters airways.
**Additional information:** The toxicological properties have not been fully investigated.

## SECTION 12: Ecological Information

**12.1 Toxicity**
**Aquatic toxicity:**

| Component | CAS NUMBER | LC50 |
|---|---|---|
| 1,2,4 - Trimethylbenzene | 95-63-6 | 7.72 mg/l/96 Hour: Fathead minnow (pimephales promelas) |
| Di-isopropylnaphthalene isomers | 38640-62-9 | Daphnia 1.7 mg/l |

**12.2 Persistence and degradability:** No further relevant information available.

**12.3 Bio accumulative potential:** No further relevant information available.

**12.4 Mobility in soil:** No further relevant information available.

**12.5 Results of PBT and vPvB Assessment:** This product contains di-isopropylnaphthalene isomers (CAS # 38640-62-9) and should be handled accordingly as if it were a PBT/vPvB.

***Cont…***

**12.6 Endocrine disrupting properties:** This product does not contain any substances that have endocrine disrupting properties.

**Additional ecological information:**

**General notes:** Toxic to aquatic life with long lasting effects.
Discharge into the environment must be avoided.

## SECTION 13: Disposal Considerations

**13.1 Waste treatment methods**

**Product:** Waste product must be disposed of according to local authority recommendations, e.g. convey to a suitable incinerator.

**Uncleaned Packaging:** Disposal must be made according to official regulations.
Uncleaned packaging may be classifiable as hazardous waste.

## SECTION 14: Transport Information

**14.1 UN-Number**
**ADR, IMDG, IATA** UN3082

**14.2 UN proper shipping name**
**ADR, IMDG, IATA** 3082, ENVIRONMENTALLY HAZARDOUS SUBSTANCE LIQUID, N.O.S (Di-isopropylnaphthalene isomers, 1, 2, 4 - Trimethylbenzene)

**14.3 Transport hazard class(es)**
**ADR, IMDG, IATA** 9 miscellaneous dangerous goods

**14.4 Packing group** -
**ADR, IMDG, IATA** III

**14.5 Environmental hazards:** This product contains environmentally hazardous substances: Di-isopropylnaphthalene isomers, 1, 2, 4 - Trimethylbenzene
Marine pollutant: Symbol (fish and tree)
Special marking (ADR): Symbol (fish and tree)

**14.6 Special precautions for user** Warning: miscellaneous dangerous substances and articles
**Hazard index number** 90
**EMS Number:** F-A,S-F

**14.7 Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code**
**Limited quantities (LQ)** 5L
**Excepted quantities (EQ)** Code: E1
Maximum net quantity per inner packaging: 30ml
Maximum net quantity per outer packaging: 1000ml
**Transport category** 3
**Tunnel restriction code** E

**IMDG**
**Limited quantities (LQ)** 5L
**Excepted quantities (EQ)** Code: E1
Maximum net quantity per inner packaging: 30ml
Maximum net quantity per outer packaging: 1000ml
**UN "Model Regulation":** 3082 ENVIRONMENTALLY HAZARDOUS SUBSTANCE. LIQUID, N.O.S (Di-isopropylnaphthalene isomers, 1, 2, 4 - Trimethylbenzene), 9, III

## SECTION 15: Regulatory Information

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

No further information available.

**15.2 Chemical safety assessment**

A Chemical Safety Assessment has been carried out on the major REACH Registered components.

## SECTION 16: Other Information

**Hazard statements**

| | |
|---|---|
| H226 | Highly flammable liquid and vapour |
| H304 | May be fatal if swallowed and enters airways. |
| H315 | Causes skin irritation |
| H319 | Causes serious eye irritation |
| H332 | Harmful if inhaled |
| H335 | May cause respiratory irritation |
| H410 | Very toxic to aquatic life with long lasting effects |
| H411 | Toxic to aquatic life with long lasting effects |

**Precautionary statements**

| | |
|---|---|
| P280 | Wear protective gloves/protective clothing/eye protection/face protection. |
| 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 person to fresh air and keep comfortable for breathing. |
| P301+P330+P331 | IF SWALLOWED: Rinse mouth. DO NOT INDUCE VOMITING. |
| P305+P351+P338 | IF IN EYES: Rinse continuously with water for several minutes. Remove contact lenses if present and easy to do – continue rinsing. |
| P501 | Dispose of contents / container in accordance with local/national regulations. |

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

SDS Last updated January 2022

***Abbreviations and acronyms:***

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the
International Carriage of Dangerous Goods by Road)
IMDG: International Maritime Code for Dangerous Goods
IATA: International Air Transport Association
GHS: Globally Harmonised System of Classification and Labelling of Chemicals
EINECS: European Inventory of Existing Commercial Chemical Substances
ELINCS: European List of Notified Chemical Substances
CAS: Chemical Abstracts Service (division of the American Chemical Society)
REACH: Registration, Evaluation, Authorisation and Restriction of Chemicals
NIOSH: National Institute of Occupational Safety and Health
LL50: Loading rate of test substance resulting in 50% mortality)
LD50: Lethal dose, 50 percent
LC50: Lethal Concentration, 50 percent

## Annex to the SDS

- This formulation contains several substances.
- The substances that contribute to its hazard classification are detailed in section 3.2 of the SDS.
- The lead component / priority substance in the formulation has been identified as di(isopropyl)naphthalene (CAS #: 38640-62-9).
- The exposure scenario data for this substance is covered in this Annex.
- This data has been reproduced exactly from the manufacturer's Extended Safety Data Sheet.
- No scaling has been applied to account for the percentage of substance in the formulation.

## Overview Of Exposure Scenarios

This section details the applicable Exposure Scenarios (ES):

| ES | Sector of Use (SU) | | Process Category (PROC) | | Product Category (PC) | | Environmental Release Category (ERC) | |
|---|---|---|---|---|---|---|---|---|
| **1** | **SU03** | Industrial uses | PROC01 | Use in closed process, no likelihood of exposure. | PC21 | Laboratory Chemicals | ERC02 | Mixing and blending of substances into (chemical) preparations in all types of formulating industries. |
| | | Manufacture of chemicals | PROC03 | Use in closed batch process (synthesis or formulation). | | | | |
| | | | PROC08b | Transfer of substance or preparation (charging/ discharging) from/to vessels/large containers at dedicated facilities. | | | | |
| | | | PROC09 | Transfer of substance or preparation into small containers (dedicated filling line, including weighing). | | | | |
| **2** | **SU21** | Professional Use | PROC15 | Use as laboratory reagent. | PC21 | Laboratory Chemicals | ERC9a | Wide dispersive indoor use of substances in closed systems. |
| | **SU24** | Scientific Research & Development | | | | | | |

- 2 exposure scenarios from the manufactures extended safety data sheet have been deemed applicable to this formulation.
- Each exposure scenario is detailed below.

## Exposure Scenario 1 – SU03

**SU03**

- **Formulation and (re)packing of substances and mixtures,**
- **Formulation in Liquid Scintillation Cocktails**
- **Industrial**

**Use Descriptors:** SU03; PROC01, PROC03, PROC08b, PROC09; ERC02
**Process Category:** PROC01, PROC03, PROC08b, PROC09
**Environmental Release Category:** ERC02
**Market sector by type of chemical product:** PC21

**Environmental contributing scenarios**

- **Formulation in scintillation cocktails:** ERC02

**Health contributing scenarios**

- **Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions:** PROC01
- **Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition:** PROC03
- **Transfer of substance or mixture (charging and discharging) at dedicated facilities:**PROC08b
- **Transfer of substance or mixture into small containers (dedicated filling line, including weighing):** PROC09

## Section 2 - SU03 - Exposure Controls

**Contributing scenario controlling environmental exposure for:**
**Amounts used:**

- Daily amount per site: ≤0.22 tonnes/day.
- Annual site tonnage: ≤65 tonnes/year.
- Release duration: ≥300 days per year.

**Other conditions affecting environmental exposure:**

- Receiving surface water flow: ≥18000 m³/d.
- Release factor after on-site risk management:
- Release to waste water from process: 0.0005 % (ESVOC SPERC 2.2.v1).
- Release to air from process: 0.05 % (ESVOC SPERC 2.2.v1).
- Release to soil from process: 0.01 % (ERC02).

**Technical conditions and measures at process level (source) to prevent release:**

- Type of activity or process: Solvent-based process.
- Negligible waste water emissions as the process operates without water contact.
- Waste water emissions generated from equipment cleaning with water.
- Negligible air emissions as the process operates in a contained system.

**Indoor use**

- Process optimised for highly efficient use of raw materials.
- On-site Exhaust air treatment: Upgrade of the system in place or additional air treatment measures, such as wet scrubber and/or air filtration and/or thermal oxidation and/or vapour recovery systems, in order to achieve a reduction of the air emissions. (Air - minimum efficiency of: 80 %).

**Conditions and measures related to sewage treatment plant**

- Municipal Sewage Treatment Plant: Yes. [Treatment effectiveness: 85.29 %].
- Discharge rate: ≥2000 m³/d.
- Application of the STP sludge on agricultural soil: Yes.

**Contributing scenario controlling worker exposure for other conditions affecting workers exposure:**

- Do not ingest.
- Avoid splashing.
- Avoid contact with contaminated tools and objects.

**Organisational measures to prevent/limit releases: dispersion and exposure**

- Training for staff on good practice.
- Supervision in place to check that the RMMs in place are being used correctly and
- OCs followed.

***Cont…***

**Conditions and measures related to personal protection, hygiene and health evaluation**
**Advice on general:** Good standard of personal hygiene.
**Occupational hygiene:** Assumes a good basic standard of occupational hygiene is implemented.

## Section 3 – SU03 - Exposure estimation and reference to source

**Exposure estimation and reference to its source - Environment:**
**Exposure assessment (environment):** EUSES v2.1.2
**Exposure estimation:**

- Freshwater: 0.00000846 mg/l.
- Risk characterisation ratio (PEC/PNEC): 0.036.
- Freshwater sediment: 0.031 mg/kg dwt.
- Risk characterisation ratio (PEC/PNEC): 0.359.
- Marine water: 0.000000773 mg/l.
- Risk characterisation ratio (PEC/PNEC): 0.033.
- Marine water sediment: 0.00279 mg/kg dwt.
- Risk characterisation ratio (PEC/PNEC): 0.328.
- Sewage Treatment Plant: 0.0000798 mg/l.
- Risk characterisation ratio (PEC/PNEC): <0.01.
- Soil: 0.016 mg/kg dwt.
- Risk characterisation ratio (PEC/PNEC): 0.907.

**Remark:** Based on the applied RMMs the risk towards environment is sufficiently controlled (RCR < 1).

**Exposure estimation and reference to its source - Workers:**
**Exposure assessment:** Qualitative approach used to conclude safe use.

## Section 4 – SU03 - Guidance to work within boundaries set by Exposure Scenarios

| | |
|---|---|
| **General:** | The immediate downstream user is required to evaluate whether the operational conditions and risk management measures described in the exposure scenario fit their use. The user has to ensure that risks are managed. The risk assessment methods/tools given in section 3 may be used for this evaluation. |
| **Environment:** | Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures. If scaling reveals a condition of unsafe use (i.e., RCRs > 1), additional RMMs or a site-specific chemical safety assessment is required. |

## Exposure Scenario 2 – SU21 & SU24

**SU24**

- **Use of Liquid Scintillation Cocktails (scintillation counting in laboratories)**
- **Professional**

**Use Descriptors**: SU24; SU21, PROC15; ERC09a

**Process Category:** PROC15

**Environmental Release Category:** ERC09a

**Market sector by type of chemical product:** PC21

**Environmental contributing scenarios**

- **Use of scintillation cocktails (scintillation counting in laboratories) -** ERC09a

**Health contributing scenarios**

- **Use as laboratory reagent -** PROC15

## Section 2 – SU21 & SU24 - Exposure Controls

**Contributing scenario controlling environmental exposure for:**
**Amounts used:**

- Daily local widespread use amount: ≤0.000036 tonnes/day.
- Percentage of EU tonnage used at regional scale: 10 %.

**Other conditions affecting environmental exposure:**

- Release to waste water from process: 0%
- Release to air from process: 0%
- Release to soil from process: 0% (ERC09a)

**Conditions and measures related to sewage treatment plant:**

- Municipal Sewage Treatment Plant: Treatment effectiveness: 85.29 %.

**Contributing scenario controlling worker exposure:**

- Do not ingest.
- Avoid splashing.
- Avoid contact with contaminated tools and objects.

**Organisational measures to prevent/limit releases dispersion and exposure:**

- Training for staff on good practice.
- Supervision in place to check that the RMMs in place are being used correctly and OCs followed

**Conditions and measures related to personal protection, hygiene and health evaluation**

**Advice on general occupational hygiene**

- Good standard of personal hygiene.
- Assumes a good basic standard of occupational hygiene is implemented.

## Section 3 – SU21 & SU24 - Exposure estimation and reference to source

**Exposure estimation and reference to its source - Environment:**
**Exposure assessment (environment):** EUSES v2.1.2
**Exposure estimation:**

- Freshwater: 0.000000887 mg/l.
- Risk characterisation ratio (PEC/PNEC): <0.01.
- Freshwater sediment: 0.00321 mg/kg dwt.
- Risk characterisation ratio (PEC/PNEC): 0.038.
- Marine water: 0.000000016 mg/l.
- Risk characterisation ratio (PEC/PNEC): <0.01.
- Marine water sediment: 0.0000579 mg/kg dwt.
- Risk characterisation ratio (PEC/PNEC): <0.01.
- Sewage Treatment Plant: 0 mg/l.
- Risk characterisation ratio (PEC/PNEC): <0.01.
- Soil: 0.0000706 mg/kg dwt.
- Risk characterisation ratio (PEC/PNEC): <0.01.

**Remark:** Based on the applied RMMs the risk towards environment is sufficiently controlled (RCR < 1).

**Exposure estimation and reference to its source - Workers:**

**Exposure assessment:** Qualitative approach used to conclude safe use.

## Section 4 – SU21 & SU24 - Guidance to work within boundaries set by Exposure Scenarios

**General:** The immediate downstream user is required to evaluate whether the operational conditions and risk management measures described in the exposure scenario fit their use. The user has to ensure that risks are managed. The risk assessment methods/tools given in section 3 may be used for this evaluation.

**Environment:** Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures. If scaling reveals a condition of unsafe use (i.e., RCRs > 1), additional RMMs or a site-specific chemical safety assessment is required.

## Glossary

ERC: Environmental Release Categories
ES: Exposure Scenario
ESVOC: European Solvents Downstream Users Group
EUSES: European Union System for Evaluation of Substances
OCs: Operational Conditions
PC: Product Category
PEC: Predicted Effect Concentration
PNEC: Predicted No-Effect Concentration
PROC: Process Category
RCR: Risk Characterisation Ratio
RMM: Risk Management Measures
SPERC: Specific Environmental Release Categories
STP: Sewage Treatment Plan
SU: Sector of Use