



Procedures for EMSA's dispersants

Quality assurance of dispersants

Appendix to Annex VI of the VAC

Procurement procedure: EMSA/CPNEG/1/2018

Title: Service Contracts for Stand-by Oil Spill Recovery Vessel(s): East Mediterranean Sea

Phase II – Invitation to Tender

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1. BACKGROUND

Dispersants typically have a multi-year shelf life, which is guaranteed by the manufacturer, if specific storage conditions are met. Ensuring the quality of dispersants over time is crucial for an effective dispersant application. Accordingly, regular monitoring of certain characteristics must be performed in order to assess the condition of the dispersant and to document changes and/or possible deterioration over time. In addition, chemical analyses of specific parameters should be performed at specific intervals as described by the manufacturer and/or subject to the necessity of checking compliance with the initial condition. However, based on experience, properly stored dispersants typically exceed the original shelf life by many years, but this requires checks and/or testing before any decision is made in this regard.

2. SCOPE & PURPOSE

The present document covers the monitoring as well as the sampling and testing of EMSA's dispersant while in storage. This document does not cover the operational use of dispersant and/or disposal of dispersant once it is no longer suitable for use.

The purpose of the document is to establish and implement a system of quality control and assurance in order to monitor the EMSA dispersant while in storage and ensure that the quality of the dispersants is maintained. If dispersants are stored appropriately they usually keep their efficiency and can be used after the expiry date. Therefore the main aim is to keep track of the efficiency. Slight decreases in efficiency can be compensated through a higher ratio of dispersant to oil.

The provisions of this document shall be applied by EMSA's dispersant storage contractors in accordance with the respective contracts and do not generate additional costs. EMSA personnel will inspect the dispersant stockpiles within the normal visits/inspections and do not require additional missions.

3. REFERENCES

The present document was developed by compiling data and information from relevant sources in France, Norway and the UK, as well as some other additional sources, as follows:

- EMSA. Manual on the Applicability of Oil Spill Dispersants, 2009
- EMSA. Inventory of Oil Spill Dispersants, 2014
- F. Merlin, P. Le Guerroue, A. Le Gall, L. Menot (CEDRE). Observation and conclusions from 10 years of periodic quality controls on operational dispersants stockpiles, 1997
- IMO. Guidelines for the use of dispersants for combating oil pollution at sea, 2014
- J. Clark, K. Becker, R. Lessard (International Oil Spill Conference). Maintaining dispersants stockpiles and assessing their quality, 2008
- Norwegian Environment Agency. Retningslinjer og sammensetning og bruk av dispergeringsmidler ved akutte utslipp (Norwegian Guidelines for use of dispersants), 2011
- OLEON NV. Instruction for use of Radiagreen OSD, 2014

4. GENERAL REQUIREMENTS

4.1 Requirements for the storage facility of dispersants

The storage facility must meet the following requirements:

- Be secured premise with restricted access;
- Have a flat levelled surface;
- Be well ventilated enclosed space;
- Have proper cargo handling equipment;

- Have in place fire-detection systems, fixed fire-fighting systems and water supply for fire-fighting. Access to fire fighting vehicles and personnel should be unrestricted;
- Use the size, if needed, of the total storage place, which is mentioned in the contract (200 – 300 m² area for dispersants and equipment).

4.2 Requirements to how the dispersants are stored

The dispersants must be stored in the following way:

- In shaded place, avoiding direct sunlight and overheating.
- Optimal storage temperature: 5 – 35 °C. Maximum temperature is 50 °C and the minimum is – 5°C.
- Store the dispersants in original IBC containers received from manufacturer, and keep the IBC containers tightly closed.
- The IBC containers can be stored on top of each other, but not more than two high. Another option is to store the IBCs on suitable racks/shelves, which will allow for a more efficient use of space and remove the restriction of the vertical IBC stacking.
- Maintain the IBC containers covered with their original protection (i.e. plastic foil) at all times or alternatively with tarpaulins.
- The IBC containers shall be stored in a way that each one is easily accessible for inspections, sampling and/or visual checks. The labels with the inventory numbers of each IBC must be visible at all times.
- The inventory numbers must be linked/matched with the dispersant manufacturer's batch number and this must be also documented.
- The different batches shall be segregated and clearly marked to facilitate identification. Furthermore, the older batches of dispersants shall be stored in such a way so that they are available and used first during response operations, in accordance with the FIFO (First In / First Out) method.

5. QUALITY CONTROL

EMSA has purchased stockpiles of dispersants and selected strategic storage locations. The dispersant manufacturer has assured a minimum shelf life of four years from the date of manufacture and has also provided quality assurance recommendations as references, which were incorporated in the current document. Furthermore, the recommended storage conditions, which must be ensured at all times during the storage of dispersant, have been included in the requirements of the relevant procurement procedures for setting-up storage locations.

The procedures for quality control of the stored dispersant include:

- Correct storage of dispersant in the warehouse.
- Quality checks for contractors and EMSA personnel.
- Follow-up if irregularities are observed.

The visual inspections are needed to closely monitor and control the storage conditions for the dispersant in view of the specific requirements, and eventually spot any deficiencies in this regard.

5.1 Contractor obligations

Visual inspections

Visual inspections shall be performed on all the IBC containers. Accordingly, the contractor shall perform:

- **Monthly inspections** to check the general conditions of the stored dispersant as follows:
 1. Presence/absence of any leaks;
 2. Presence/absence of any damage to the IBC containers (both filled and empty).

It is important to note that any type of visual check shall be performed without opening the IBC containers.

Reporting

Once the visual checks are performed the information collected shall be compiled and reported to EMSA as follows:

- **For the monthly inspections:** the relevant information shall be included in a dedicated section within the monthly maintenance report. As a minimum, information on the absence/presence of leaks and condition of the IBCs (by inventory number if any problems are detected) shall be included. Given the limited number of aspects to be checked no dedicated inspection checklist is required, but any findings shall be appropriately reported to EMSA.

If any changes and/or deficiencies are identified, pictures shall be taken to best document them. These pictures shall also be included or annexed to the reports.

5.2 EMSA obligations

General inspection

EMSA personnel shall visit the dispersant storage locations annually to verify the general storage conditions as follows:

- Check that the storage of dispersants is according to the specific requirements as mentioned in part 4 of this document:
 1. In accordance with part 4.1 – Requirements for the storage facility of dispersants;
 2. In accordance with part 4.2 – Requirements to how the dispersants are stored.
- Check that the IBC containers are stored in such a way that all containers can be inspected and sampling is possible of all the batches.
- Check that the labelling is appropriate (labels are correctly fastened, visible, etc.).
- Check that the IBC containers are sorted and arranged by batch and that the FIFO principle can be easily fulfilled.
- Ensure that relevant information is received from the contractors (e.g. reports sent as agreed).
- Follow up with the contractors if something is not complying with the requirements.

Visual checks

Besides the general inspection of the storage area, the EMSA personnel shall also perform a visual inspection of all the IBC containers. The inspections are carried out annually, unless exceptional circumstances occur and there is a need for more frequent inspections. The IBCs shall not be opened for the visual inspections.

- **Inspections** shall be performed to check the condition of the dispersant, as follows:
 1. Occurrence of suspended particles and/or flocculants;
 2. Occurrence of colour changes (The liquid is yellow to amber. A change of colour may normally occur over time, usually from lighter to darker colour. The colour within batches should remain the same, although it may differ between batches.);
 3. Occurrence of visible layers;
 4. Other noticeable changes.

Use the checklist provided in Appendix 1.

Other follow up

Other follow up activities for EMSA are:

- Provide specific information to the contractor(s) before new dispersants are delivered at the storage place(s). EMSA shall provide total amount to be delivered (m³), specify batch numbers and quantity the different batches;

- Perform sampling and follow up the test results. Include all observations from the inspections and test results in EMSA's Equipment Inventory.

Reporting

For the visual inspection: the relevant information and findings shall be included in a stand-alone report and the dedicated checklist shall be used. A template of the 'Checklist for visual checking of the dispersant' is provided in Appendix 1. All relevant information concerning the dispersant should be included in the Equipment Inventory. As a minimum, the following information shall be included:

- Batch numbers and quantities of all stocked dispersants;
- Observations from annually inspections;
- Test results given by manufacture(s) and other test results of the dispersants.

6. QUALITY ASSURANCE

The recommendations for quality assurance of the stored dispersant include:

- Sampling of the dispersants;
- Types of laboratory analyses to be performed;
- Follow-up if irregularities are observed.

The testing is needed to record and document the quality and the efficiency of the dispersant. EMSA must have reliable information about the test results and how the quality assessment is performed, as Member States may ask for this information if EMSA's stockpiles are to be used in an oil spill incident.

Sampling of the IBC containers and test results

The sampling will be performed by EMSA personnel and can be performed in connection with other tasks. The sampling procedure shall be agreed both with the laboratory that will perform the test and the dispersant manufacturer.

The sampling shall be performed before the expiration date of the self-life for verification of compliancy of guaranteed efficiency and thereafter in regular intervals, which initially will be every two years, and which, depending on the results, may be increased and performed on an annual basis.

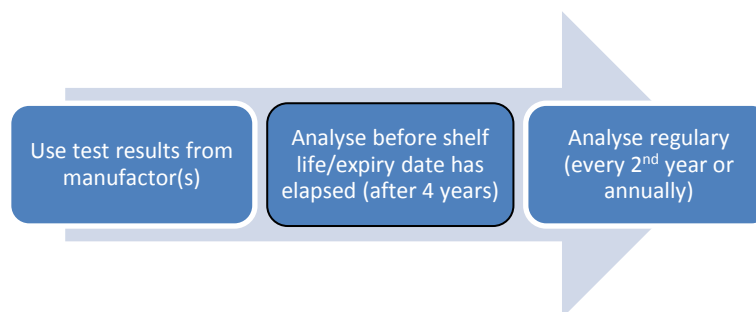


Figure 1. Time schedule for sampling/analyses of the dispersant. If exceptional circumstances occur more frequently sampling may be needed.

The sampling process shall be performed in accordance to published guidelines (will be further defined¹):

- Sample each batch according to a sampling plan;
- Mark and record the containers sampled (sequential samples shall be taken from the same IBCs);

¹ A tender for laboratory services will be launched; this tender will include guideline for sampling and sampling equipment. The relevant parts in Bonn Agreement Counter Pollution Manual (Chapter 32) and CEN/TR 15522-1:2006 (Part 1 sampling) shall apply.

- Sample from the tap of the IBC containers. Sample a clear liquid;
- Use appropriate sampling equipment;
- Fill in forms and label the samples;
- Follow correct procedures when packing the samples for shipping.

EMSA needs to follow up if test results are below accepted threshold(s) or major changes of the dispersants are observed following the visual check by EMSA and the contractors. Major changes of the dispersants (e.g. colour change within the same batch and layers in the IBC containers) may be investigated further by sampling of the specific batches. If changes occur before the expiry of the guaranteed shelf-life, the manufacturer may be responsible for replacement. Sampling of the dispersant will normally be performed as indicated in figure 1. Test results from analyses will be compared to defined threshold values. Lower efficiency based on test results may be compensated by increased dispersant to oil ratios when used.

All test results, given by the manufacture(s) and results from the sampling performed by the EMSA staff, must be recorded in the the EMSA Equipment Inventory.

Types of laboratory analyses

Test results shall be obtained from the manufacturer at the time of purchase, as they usually sample and test each batch. The test results are important reference values for later performed tests. For each batch, the manufacturer has provided test results for viscosity (at 0°C), cloud point and flash point as a minimum. The manufacturer shall also provide results from efficiency tests. If no test results can be obtained from manufacturers, it is prudent to sample each new batch.

Before the expiry dates of the dispersants have passed, tests on all batches shall include the analysis of:

- Efficiency;
- Density;
- Viscosity.

Dispersant manufacturers guarantee a four year shelf life when stored in sealed containers under specified storage conditions. Thereafter, sampling and analyses are performed regularly, preferably every two years or annually, depending on the results of the first performed tests.

If it is deemed appropriate, efficiency tests can be performed and a case by case decision will be made. Low energy tests provide more information about efficiency, which is a reason why EMSA has a preference for using the IFP test (Institut Français du Pétrole, a test protocol following French standard NF.T.90-345) for recheck of dispersants. The test results for efficiency shall pass the 50% value threshold when the recheck is performed (this is the value used in this specific test protocol. For the approval of a dispersant, an efficacy of 60% is required). The test will be performed according to the French standard used for the IFP test. The dispersant manufacturer shall provide test results from the efficiency tests, which were performed for approval of the product in different countries.

Transport

The dispersant purchased by EMSA is not regulated as “Dangerous Goods” for transport under ADR, IMDG and IATA regulations. The package of the samples should be marked “Not IATA restricted” (can be sent by aircraft) and the Material Safety Data Sheet (MSDS) shall be included. The MSDS (section 14) contains transport information.

7. Appendix

Appendix 1 - Checklist for visual checking of the dispersant

Appendix 1 Checklist for visual checking of the dispersant

Inspection shall be performed annually.

Template for the checklist:

	A	B	C	D	E	F	G	H	I	J
1	Location:							Colour dispersants		
2	Verification date: dd/mm/yyyy							amber	1	
3	Name Inspector:							yellow	2	
4	Maximum temperatur in the storage:							orange	3	
5								red	4	
6	IBC Identification		Suspensions Flocculants Y/N	Colour (indicate the number 1-5)	Layers Y/N	Other observations		green	5	
7	Batch No	Inventory No.								
8										
9										
10										
11										
12										
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ABOUT THE EUROPEAN MARITIME SAFETY AGENCY

The European Maritime Safety Agency is one of the European Union's decentralised agencies. Based in Lisbon, the Agency provides technical assistance and support to the European Commission and Member States in the development and implementation of EU legislation on maritime safety, pollution by ships and maritime security. It has also been given operational tasks in the field of oil pollution response, vessel monitoring and in long-range identification and tracking of vessels.

European Maritime Safety Agency

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emsa.europa.eu

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

1.1. Product identifier

Product form : Mixture
Generic name : RADIAGREEN OSD
REACH number : all the ingredients of this product in the scope of Regulation 1907/2006/EC (REACH), if not exempted, have been (pre-)registered.
C&L notification reference no : all the ingredients of this product in the scope of Regulation 1272/2008/EC (CLP), if not exempted, have been notified to the C&L Inventory.

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

1.2.1. Relevant identified uses

Main use category : Industrial use
Industrial/Professional use spec. : wide dispersive use
Industrial category : IC2 - Chemical industry: basic chemicals, IC3 - Chemical industry: chemicals used in synthesis

1.2.2. Uses advised against

No additional information available

1.3. Details of the supplier of the safety data sheet

OLEON N.V.
Assenedestraat 2
9940 Ertvelde - Belgium
T +32 9 341 10 11 - F +32 9 341 10 00
sds@oleon.com - www.oleon.com

1.4. Emergency telephone number

Emergency number : +32 3 575 55 55
24/7 EMERGENCY NUMBER (SGS ERS; Oleon contract nr 76858)

Country	Official advisory body	Address	Emergency number
AUSTRALIA	Poisons Information Centre	PO Box 11 2606 ACT WODEN	13 11 26
IRELAND (REPUBLIC OF)	National Poisons Information Centre Beaumont Hospital	PO Box 1297 Beaumont Road 9 Dublin	+353 1 809 2166 (public, 8am - 10pm, 7/7)
Ísland	Eitrunarmiðstöð Landspítali	Fossvogi 108 Reykjavik	+354 543 22 22
Malta	Medicines & Poisons Info Office	Mater Dei Hospital MSD Msida	+356 2545 6504
UNITED KINGDOM	National Poisons Information Service (Belfast Centre) Royal Victoria Hospital	Grosvenor Road BT12 6BA Belfast	0844 892 0111 (UK only, Monday to Friday, 08.00 to 18.00 hours)
UNITED KINGDOM	National Poisons Information Service (Birmingham Centre) City Hospital	Dudley Road B18 7QH Birmingham	0844 892 0111 (UK only, Monday to Friday, 08.00 to 18.00 hours)
UNITED KINGDOM	National Poisons Information Service (Cardiff Centre) Gwenwyn Ward, Llandough Hospital	Penarth CF64 2XX Cardiff	0844 892 0111 (UK only, Monday to Friday, 08.00 to 18.00 hours)
UNITED KINGDOM	NPIS Edinburgh (Scottish Poisons Information Bureau) Royal Infirmary of Edinburgh	51 Little France Crescent EH16 4SA Edinburgh	0844 892 0111 (UK only, Monday to Friday, 08.00 to 18.00 hours)
UNITED KINGDOM	Guy's & St Thomas' Poisons Unit Medical Toxicology Unit, Guy's & St Thomas' Hospital Trust	Avonley Road SE14 5ER London	0870 243 2241
UNITED KINGDOM	National Poisons Information Service (Newcastle Centre) Regional Drugs and Therapeutics Centre, Wolfson Unit	Claremont Place Newcastle-upon-Tyne NE1 4LP Newcastle	0844 892 0111 (UK only, Monday to Friday, 08.00 to 18.00 hours)
WORLDWIDE	World directory of poisons centres (Yellow Tox) WHO-OMS	Website	http://www.who.int/gho/phe/c_hemical_safety/poisons_centres/en/
Ελλάδα	Poisons Information Centre Children's Hospital "Aglaia. Kyriakou"	11527 Athens	+30 10 779 3777
Ελλάδα	Department of Forensic Medicine & Toxicology Aristotle University of Thessaloniki, Medical Faculty	54006 Thessaloniki	
إسرائيل	Israel Poison Information Center Rambam Health Care Campus	6 Ha'Aliya Street 31096 Haifa	+972 4 854 1900

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification according to Regulation (EC) No. 1272/2008 [CLP]

Skin Irrit. 2 H315

Eye Dam. 1 H318

Full text of H-phrases: see section 16

Classification according to Directive 67/548/EEC [DSD] or 1999/45/EC [DPD]

Xi; R41

Full text of R-phrases: see section 16

Adverse physicochemical, human health and environmental effects

No additional information available

2.2. Label elements

Labelling according to Regulation (EC) No. 1272/2008 [CLP]

Hazard pictograms (CLP)



GHS05

Signal word (CLP)

: Danger

Hazardous ingredients

: Anionic surfactant, Ethoxylates

Hazard statements (CLP)

: H315 - Causes skin irritation
H318 - Causes serious eye damage

Precautionary statements (CLP)

: P264 - Wash hands thoroughly after handling
P280 - Wear eye protection, protective clothing, protective gloves
P302+P352 - IF ON SKIN: Wash with plenty of soap and 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
P310 - Immediately call a POISON CENTER or doctor/physician
P321 - Specific treatment (see emergency phone number on this label)

2.3. Other hazards

No additional information available

SECTION 3: Composition/information on ingredients

3.1. Substance

Not applicable

3.2. Mixture

Name	Product identifier	%	Classification according to Directive 67/548/EEC
Anionic surfactant (Component)		0,5 - 20	Xi; R41 Xi; R38
Ethoxylates (Component)		0,5 - 5	Xn; R22 Xi; R41

Name	Product identifier	%	Classification according to Regulation (EC) No. 1272/2008 [CLP]
Anionic surfactant (Component)		0,5 - 20	Skin Irrit. 2, H315 Eye Dam. 1, H318
Ethoxylates (Component)		0,5 - 5	Acute Tox. 4 (Oral), H302 Eye Dam. 1, H318

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

SECTION 4: First aid measures

4.1. Description of first aid measures

First-aid measures general

: If you feel unwell, seek medical advice.

First-aid measures after inhalation

: Remove the victim into fresh air. Respiratory problems: consult a doctor/medical service.

First-aid measures after skin contact

: Rinse with water. Soap may be used. Take victim to a doctor if irritation persists.

First-aid measures after eye contact	: Rinse with water. Take victim to an ophthalmologist if irritation persists.
First-aid measures after ingestion	: Rinse mouth with water. Call Poison Information Centre (www.who.int/ipcs/poisons/centre/directory/en). Consult a doctor/medical service if you feel unwell.

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

Symptoms/injuries	: Unlikely to cause harmful effects.
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4.3. Indication of any immediate medical attention and special treatment needed

No supplementary information available.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media	: AFFF foam. BC powder. Carbon dioxide. Dry sand. Dry chemical powder. Adapt extinguishing media to the environment.
Unsuitable extinguishing media	: Solid water jet ineffective as extinguishing medium.

5.2. Special hazards arising from the substance or mixture

Fire hazard	: DIRECT FIRE HAZARD. Combustible. INDIRECT FIRE HAZARD. Heating increases the fire hazard. Temperature above flashpoint: higher fire/explosion hazard.
Explosion hazard	: No direct explosion hazard.
Reactivity	: On burning: release of (carbon monoxide - carbon dioxide).

5.3. Advice for firefighters

Other information	: No supplementary information available.
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SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

General measures	: Mark the danger area. Exposure to heat: have neighbourhood close doors and windows. Exposure to fire/heat: consider evacuation. Wash contaminated clothes.
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6.1.1. For non-emergency personnel

Protective equipment	: See "Material-Handling" to select protective clothing.
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6.1.2. For emergency responders

Protective equipment	: Use protective measures listed in Section 8.
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6.2. Environmental precautions

Prevent soil and water pollution.

6.3. Methods and material for containment and cleaning up

Methods for cleaning up	: Clean contaminated surfaces with an excess of water and soap solution. Take up liquid spill into inert absorbent material, e.g.: dry sand/earth/vermiculite or powdered limestone.
Other information	: No supplementary information available.

6.4. Reference to other sections

Handle waste materials in accordance with the provisions of Section 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Handling temperature	: ≥ 10 °C above melting point
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7.2. Conditions for safe storage, including any incompatibilities

Prohibitions on mixed storage	: KEEP SUBSTANCE AWAY FROM: heat sources.
Storage area	: Keep container in a well-ventilated place. Store at ambient temperature. Keep out of direct sunlight. Meet the legal requirements.
Special rules on packaging	: SPECIAL REQUIREMENTS: closing. correctly labelled. meet the legal requirements.
Packaging materials	: No supplementary information available.

7.3. Specific end use(s)

No additional information available

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

No additional information available

8.2. Exposure controls

Personal protective equipment : Gloves. Protective clothing. Safety glasses.



Materials for protective clothing : GIVE GOOD RESISTANCE: nitrile rubber.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	: Liquid
Appearance (room temperature)	: Liquid.
Colour	: Yellow to amber.
Odour	: Characteristic odour. Sweet odour.
pH	: No data available
Melting point	: < -15 °C
Boiling point	: No data available
Flash point	: > 110 °C (ASTM D92)
Auto-ignition temperature	: > 150 °C
Decomposition temperature	: > Flash point
Vapour pressure	: No supplementary information available
Relative vapour density at 20 °C	: No data available
Relative density	: No data available
Density	: ca. 994,2 kg/m ³ (20°C) ca. 978,2 kg/m ³ (40°C) ca. 930,2 kg/m ³ (100°C)
Solubility	: No data available
Log Pow	: > 5
Viscosity, kinematic	: ca. 31 mm ² /s (40°C)

9.2. Other information

Other properties : Oily. Soluble in oils/fats. soluble in most organic solvents. Insoluble in water.

SECTION 10: Stability and reactivity

10.1. Reactivity

On burning: release of (carbon monoxide - carbon dioxide).

10.2. Chemical stability

Stable under normal conditions.

10.3. Possibility of hazardous reactions

No additional information available

10.4. Conditions to avoid

No supplementary information available.

10.5. Incompatible materials

No supplementary information available.

10.6. Hazardous decomposition products

No supplementary information available.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity	: Not classified
Skin corrosion/irritation	: Causes skin irritation.
Serious eye damage/irritation	: Causes serious eye damage.
Respiratory or skin sensitisation	: Not classified
Germ cell mutagenicity	: Not classified
Carcinogenicity	: Not classified
Reproductive toxicity	: Not classified

Specific target organ toxicity (single exposure) : Not classified
Specific target organ toxicity (repeated exposure) : Not classified
Aspiration hazard : Not classified

SECTION 12: Ecological information

12.1. Toxicity

Ecology - general : According to literature: no environmental hazard.
Ecology - air : No supplementary information available.
Ecology - water : No bioaccumulation data available

12.2. Persistence and degradability

No additional information available

12.3. Bioaccumulative potential

RADIAGREEN OSD	
Log Pow	> 5

12.4. Mobility in soil

No additional information available

12.5. Results of PBT and vPvB assessment

No additional information available

12.6. Other adverse effects

Other information : No supplementary information available.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Disposal : Prevent dispersion by covering with dry absorbent, Scoop solid spill into closing containers, Scoop absorbed substance into closing containers, Clean contaminated surfaces with an excess of water and soap solution, Wash clothing and equipment after handling
Regional legislation (waste) : No supplementary information available.
Ecology - waste materials : Do not discharge into drains or the environment. Remove to an authorized waste treatment plant.
European List of Waste (LoW) code : No supplementary information available

SECTION 14: Transport information

In accordance with ADR / RID / IMDG / IATA / ADN

14.1. UN number

Not regulated for transport

14.2. UN proper shipping name

Not applicable

14.3. Transport hazard class(es)

Not applicable

14.4. Packing group

Not applicable

14.5. Environmental hazards

Other information : Marine pollutant: no.

14.6. Special precautions for user

14.6.1. Overland transport

Transport regulations (ADR) : Not subject
Transport regulations (RID) : Not subject
State during transport (ADR-RID) : Rail and road transport: not subject to ADR-RID

14.6.2. Transport by sea

Transport regulations (IMDG) : Not subject

14.6.3. Air transport

Transport regulations (IATA) : Not subject

Instruction "cargo" (ICAO) : Not applicable
Instruction "passenger" (ICAO) : Not applicable
Instruction "passenger" - Limited quantities (ICAO) : Not applicable

14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable

SECTION 15: Regulatory information

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

15.1.1. EU-Regulations

Contains no substances with Annex XVII restrictions
RADIAGREEN OSD is not on the REACH Candidate List
Contains no substance on the REACH candidate list
Contains no REACH Annex XIV substances

15.1.2. National regulations

Chemical inventories : Listed on AICS, DSL, ECL, ECST, IECSC, NZIoC, PICCS, TSCA, EC inventories

15.2. Chemical safety assessment

No additional information available

SECTION 16: Other information

Chem. inventories legend : AICS = Australian Inventory of Chemical Substances
DSL = Canadian Domestic Substances List
ECL = Korean Existing Chemical List
ECST = Existing Chemical Substances Inventory of Taiwan
IECSC = Inventory of Existing Chemicals Substances in China
NZIoC = New Zealand Inventory of Chemicals
PICCS = Philippine Inventory of Chemicals and Chemical Substances
TSCA = USA Toxic Substances Control Act
EC inventories = European Community inventories of chemicals
(EINECS/ELINCS/NLP/REACH)

Indication of changes:

SDS changed sections : 16 - Other information; 9 - Physical and chemical properties
SDS Reason for revision : No supplementary information available
Training advice : No supplementary information available.
Other information : No supplementary information available.

Full text of R-, H- and EUH-phrases:

Acute Tox. 4 (Oral)	Acute toxicity (oral), Category 4
Eye Dam. 1	Serious eye damage/eye irritation, Category 1
Skin Irrit. 2	Skin corrosion/irritation, Category 2
H302	Harmful if swallowed
H315	Causes skin irritation
H318	Causes serious eye damage
R22	Harmful if swallowed
R38	Irritating to skin
R41	Risk of serious damage to eyes
Xi	Irritant
Xn	Harmful

SDS Oleon Annex II

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product