



Procedures for EMSA's dispersant

Quality assurance of dispersant

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Document History

Version	Date	Changes	Prepared	Approved
1.0	24/07/2015	Initial version	22/6/2015	24/7/2015
2.0	24/11/2016	Update of the quality assurance through checks	21/11/2016	24/11/2016
2.1	23/03/2017	Introduction of a checklist template for reporting of the monthly checks by the contractors (section 5.1)	23/03/2017	23/03/2017

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1. BACKGROUND

Dispersant typically has a multi-year shelf life, which is guaranteed by the manufacturer, if specific storage conditions are met. Ensuring the quality of dispersant 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 dispersant typically exceeds 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 dispersant is maintained. If dispersant is stored appropriately it usually keeps its 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 dispersant

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, thus ensuring sufficient access to each individual IBC.

4.2 Requirements to how the dispersant is stored

The dispersant 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 dispersant 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 dispersant 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 dispersant 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

5.1.1. Visual inspections

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

- **Monthly inspections** to check, as a minimum, 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 than any type of visual check shall be performed without opening the IBC containers.

5.1.2. Reporting

Once the visual checks are performed the information collected shall be compiled and reported to EMSA through the dedicated checklist (Appendix 2) to be submitted together with the other monthly reporting.

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 report.

5.2 EMSA obligations

5.2.1. General inspection

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

- Check that the storage of dispersant 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 dispersant;
 2. In accordance with part 4.2 – Requirements to how the dispersant is 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.

5.2.2. 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 Annex 1.

5.2.3. Other follow up

Other follow up activities for EMSA are:

- Provide specific information to the contractor(s) before new dispersant is 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.

5.2.4. 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 dispersant;
- Observations from annually inspections;
- Test results given by manufacture(s) and other test results of the dispersant.

6. QUALITY ASSURANCE

The recommendations for quality assurance of the stored dispersant include:

- Sampling of the dispersant;
- 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.

6.1 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.

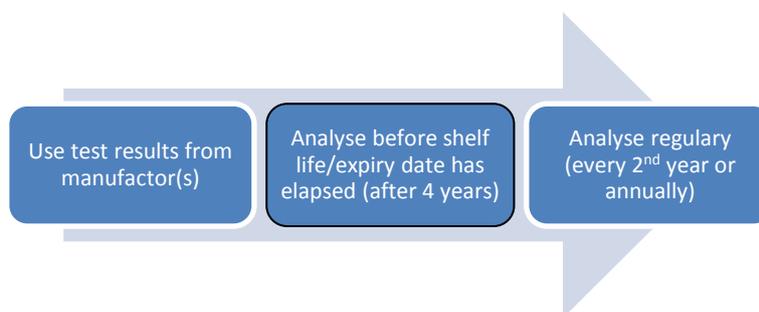


Figure 1. Time schedule for sampling/analyses of the dispersant. If exceptional circumstances occur more frequently sampling may be needed.

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);
- 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 dispersant are observed following the visual check by EMSA and the contractors. Major changes of the dispersant (e.g. colour

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.

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.

6.2 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 dispersant 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 dispersant. 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.

6.3 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 2 – Dispersant monthly checklist

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											
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Appendix 2 Dispersant monthly checklist

DISPERSANT MONTHLY CHECKLIST <i>(to be filled by the EMSA Contractor)</i>

EMSA Contractor:	
Month:	Year:

Item to check	Conformity		Remarks
	Yes	No	
Inventory of dispersant IBCs is complete	<input type="checkbox"/>	<input type="checkbox"/>	
All manufacturer labels are in place & visible	<input type="checkbox"/>	<input type="checkbox"/>	
All EMSA labels are in place & visible	<input type="checkbox"/>	<input type="checkbox"/>	
All IBCs are properly stored	<input type="checkbox"/>	<input type="checkbox"/>	
No damage / deformation occurred to any IBC	<input type="checkbox"/>	<input type="checkbox"/>	
All IBC caps / valves are properly closed	<input type="checkbox"/>	<input type="checkbox"/>	
All IBCs are free of any leaks	<input type="checkbox"/>	<input type="checkbox"/>	
General remarks:			

Name of person conducting the verification:	
Date of verification:	Signature:

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