



guardians of drinking water quality

**APPROVAL OF PRODUCTS  
FOR  
USE WITH DRINKING WATER**

## **Advice Sheet 9**

# **Emergencies – Use of Equipment and Disinfectants**

**DOCUMENT CONTROL**

The only controlled version of this document can be accessed on the [DWI Website](#). Printed copies of this document, together with electronic copies held on local computers and other storage devices are uncontrolled.

**Version 2.9**

**March 2018**

## Preface

This series of advice sheets has been prepared by the Drinking Water Inspectorate (DWI) to provide guidance on the approval process for products for use in contact with water intended for human consumption.

The following advice sheets are currently available:

Advice Sheet	Title
1.	Overview of the Application Process
2.	Instructions for Use (IFU) Requirements
3.	Treatment Chemicals, Filter Media & Ion Exchange Resins
4.	Changes to Approved Products
5.	Products made from Recognised Grades of Materials
6.	Approval of Membrane Filtration Systems & Associated Equipment
7.	Construction Products for Water Retaining Structures
8.	Small Surface Area (regulation 31(4)(b))
<b>9.</b>	<b>Emergencies – Use of Equipment and Disinfectants</b>
10.	Natural and Traditional Products
11.	Product Re-approval Process

### Availability

Copies of the most up-to-date versions of these advice sheets can be freely downloaded from the [DWI website](#).

### Application Forms

A series of product type related applications forms are available from the [DWI website](#).

### Laboratory Test Protocols

A series of product type related laboratory test procedures are available from the [DWI website](#).

### Contact

For further information or help please contact:

Regulation 31 Enquiries,  
Telephone: +44 (0)300 068 6400  
E-mail: [reg31.enquiries@defra.gsi.gov.uk](mailto:reg31.enquiries@defra.gsi.gov.uk)

## Table of Contents

Preface.....	2
Table of Contents.....	3
Glossary .....	4
1. Introduction.....	5
2. Water Storage & Distribution Equipment used in Emergencies .....	5
2.1 Test Requirements for New Emergency Equipment .....	5
3. Disinfectants used in Emergencies .....	7
3.2 Action by the Drinking Water Supplier.....	8
4. Emergency Repair & Re-Instatement of Infrastructures & Associated Equipment .....	9
4.1 Background.....	9
Annex A – Guidance on the Risk Assessment of Disinfectants for Emergency use.....	10
Annex B - Guidance on the Emergency use of Existing Water Storage & Distribution Equipment.....	12

## Glossary

### The Regulations

The following regulations apply to the approval of substances and products used in the provision of public water supplies within the United Kingdom:

- a) England - regulation 31 of [The Water Supply \(Water Quality\) Regulations 2016](#) (Statutory Instruments 2016 No 614).
- b) Wales – regulation 31 of [The Water Supply \(Water Quality\) Regulations 2010](#) (Welsh Statutory Instrument 2010 No 994 (W.99) - and [Amendment Regulations 2016](#) (No. 410 (W. 129))
- c) Scotland – regulation 33 of [The Public Water Supplies \(Scotland\) Regulations 2014](#)
- d) Northern Ireland – regulation 30 of [The Water Supply \(Water Quality\) \(Amendment\) Regulations \(Northern Ireland\) 2009](#) (Statutory Rules of Northern Ireland 2009 No.246)

Where reference is required to specific regulatory requirements, these are given in footnotes.

### The Authorities

Under the relevant regulations water suppliers shall not apply or introduce any substance or product into public water supplies unless the requirements of the relevant regulations are met. One of these requirements is that the substance or product has been **approved** by either the Secretary of State for the Environment Food and Rural Affairs (England), the Welsh Ministers (Wales), the Northern Ireland Assembly (Northern Ireland) or the Scottish Ministers (Scotland); collectively referred to as “the Authorities”.

### The List

Under the relevant regulations lists of all the substances and products approved or refused, and of all approvals revoked or modified are published at least once a year:

*England and Wales:* this list is regularly updated by DWI throughout the year, and includes details of changes to approved products and additions to the List; the list (the [List of Products for use in Public Water supply in the United Kingdom](#)) is posted on the DWI website. Reference to “the List” throughout this publication refers to the most up-to-date version available from the website.

*Scotland:* a list is published annually by the Scottish Government on their [website](#).

*Northern Ireland:* in due course the Department for Regional Development (Northern Ireland) will also publish a list.

### The Approval of a Product

Approval is based upon consideration as to whether the use of a substance or product will adversely affect the quality of the water supplied, or cause a risk to the health of consumers; no consideration is given to fitness for purpose and approval by the Authorities must not be taken as a favourable assessment of the performance or merits of any substance or product. It is the responsibility of the end user to ensure fitness for purpose.

The approval process for general products used with water intended for human consumption is set out in [Advice Sheet 1](#). Relevant deviations from this process are set out in the appropriate Advice Sheets.

### Water Suppliers

These include water undertakers, inset appointees, and water supply licensees; see The Water Act 2003 (Consequential and Supplementary Provisions) Regulations 2005.

# 1. Introduction

**It is the drinking water supplier's responsibility to ensure that products and equipment used in emergency situations meet the appropriate requirements set out in this Advice Sheet, and that adequate plans are in place to ensure the implementation under emergency situations.**

When the current relevant regulations were introduced guidance was provided on the impact of the new regulations on the use of existing equipment see Annex B and further consideration was given to the test requirements for new equipment for emergency use, including use during routine maintenance.

Section B.3 of the “[List of Approved Products for use in Public Water Supply](#)” details those products that have been considered by DWI and recommended to the authorities for use in emergencies only.

Section E.1 (Other Water Treatment Works Installations – Tanks) contains details of some suitable tanks for emergency use that have met the full requirements for approval under the relevant regulations. (Note: the equipment listed in this section has been fully approved for routine use as well as in emergencies.)

This Advice Sheet provides guidance to applicants and drinking water suppliers on the requirements for new equipment to be used in an emergency, together with emergency disinfectants and emergency repairs to infrastructure. It also provides guidance on the effect of introducing a risk management based approach to the use of these products in an emergency.

## 2. Water Storage & Distribution Equipment used in Emergencies

### 2.1 Test Requirements for New Emergency Equipment

Emergency equipment will cover products such as tanks and bowsers, flexible hoses, and specialised bulk water containers. Applicants wishing to seek approval of their product(s) for use in emergencies, and listing in Section B.2 of the “List” should send the following information to Regulation 31 Enquiries:

- a) Full BS 6920 test report including satisfactory test results for each non-metallic material incorporated into the equipment (or other acceptable evidence, e.g. full results of equivalent testing undertaken in another EU Member State, **or** listing of the material(s) in the Water Fittings and Materials Directory published by the Water Regulations Advisory Scheme ([WRAS](#)))
- b) Full disclosure of the formulation of each non-metallic material, including all ingredients (their chemical names, CAS numbers and concentrations – the latter must add up to 100%)
- c) Material Safety Data Sheets (MSDS) for each of the ingredients of the material – if these do not contain full formulation details of the ingredient, this information should

be provided separately, in confidence, by the manufacturer/supplier of the ingredient. Reference to unspecified confidential or proprietary chemicals in the ingredient formulation is not acceptable ([FAQ14](#))

- d) An Instructions for Use document conforming to the requirements set out in [Advice Sheet 2](#)
- e) An application form

Upon receipt of all of this information the DWI will consider the application, and if acceptable, will recommend the product's listing in the "List" for emergency use only (Section B.2).

**Note:** Guidance on requirements for existing equipment is given in Annex B.

## 2.2 Non Availability of Approved Equipment during an Emergency

DWI recognizes that in some emergency situations suitable water storage and distribution equipment which have already been approved under the appropriate regulations may not be available or suitable. In this case contact should be made with the appropriate Inspector for the drinking water supplier involved, in the first instance. The following information should be provided:

- A full description of the equipment (including the nature of all water contact materials)
- The source of the equipment and its previous use
- How it will be used (including any cleaning/disinfection that will be undertaken)
- Any testing that will be undertaken before the water is supplied to the public
- Length of time the equipment is likely to be in use
- Any restrictions of use that will be applicable.

## 3. Disinfectants used in Emergencies

### 3.1 Background

Products are used in the continuous disinfection of public water supplies on the basis that they meet the requirements of the relevant regulations<sup>1</sup> (usually through conformity with appropriate EN standards). In some emergency situations, however, it may be appropriate to consider the use of other disinfectant products as part of the emergency response to an incident in a public water supply

Recently the DWI undertook a review of all disinfectants not covered by an appropriate EN standard, including those used in emergencies. The aims of this review were to ensure that practice in respect of approval of disinfectants is:

- in line with the requirements of the Biocidal Products Regulations 2001 (BPR) and decisions of the Advisory Group on the Biocidal Products Directive for Product Type 5 (drinking water disinfectants)
- in agreement with any advice given by the Health Protection Agency (HPA) on disinfection in buildings
- in agreement with DWI's risk-based approach to regulation.

The BPR are within the remit of the Health and Safety Executive and any queries or applications relating to them should be addressed there and not to DWI. The HPA advice was developed as a result of problems that have arisen as a consequence of some product suppliers making inappropriate use of the regulation 31 [33 in Scotland and 30 in Northern Ireland] approval of emergency disinfectants and related products in the context of the maintenance of building water systems. The HPA makes this advice available to local authorities, health trusts and primary care trusts in relation to the discharge of their duties in respect of the maintenance of various types of public building water systems.

As a result of the review the Authorities have decided that in the case of emergency disinfection, it is the responsibility of the water supplier to decide the appropriate choice of emergency disinfectant, based on a specific risk assessment taking into account:

- the need to use a product other than those disinfectants in routine use
- the safety of the disinfectant and any potential health risks to consumers under the proposed conditions of use
- the effectiveness of the disinfectant in control of microorganisms under the proposed conditions of use

On this basis the decision was made to remove the list of “Disinfectants for Emergency Use” from the “List”. A new risk-based approach to the use of disinfectants in an emergency has now been introduced.

---

<sup>1</sup> regulation 31(3) or regulation 31(4)(a) of the Water Supply (Water Quality) Regulations 2016 or The Water Supply (Water Quality) Regulations 2010 in Wales; regulation 33(2) or 33(3)(a) of the Water Supply (Water Quality) (Scotland) Regulations 2001; and regulation 30(3) or 30(4)(a) of The Water Supply (Water Quality) (Amendment) Regulations (Northern Ireland) 2009.

### 3.2 Action by the Drinking Water Supplier

Drinking water suppliers may use an emergency disinfectant in accordance with the requirements of the relevant regulations<sup>2</sup>, provided they follow the risk-based procedure – see **Annex A**.

It is important that relevant staff of drinking water suppliers know that approvals by the Authorities do not give any indication as to the effectiveness or merits of a product. Regrettably the Inspectorate is not in a position to control the way information about approvals of disinfectant products is used by other parties in the conduct of their business.

**Note: disinfectants suitable for use in the decontamination of surfaces, including in an emergency, continue to be listed in “the List” – see Section A.4.**

---

<sup>2</sup> Regulation 31(4)(b) [33(3)(b) in Scotland and 30(4)(b) in Northern Ireland



## 4. Emergency Repair & Re-Instatement of Infrastructures & Associated Equipment

### 4.1 Background

Critical failures can sometimes occur to water retaining structures and distribution systems, or to the equipment used in the treatment and distribution of drinking water, that require immediate emergency remedial action, but where suitably fit-for-purpose approved products, under the requirements of the Authorities, may not necessarily be available. The following guidance is provided to assist water suppliers in deciding upon acceptable remedial actions under these circumstances.

### 4.2 Action by the Drinking Water Supplier

Contact the Regulation 31 team of DWI as soon as possible for guidance.

To ensure we can provide a speedy response please provide the following minimum information:

- a) The nature and location of the failure
- b) The position of the failure in relation to water treatment e.g. upstream of the treatment works
- c) A summary of any treatment given to the water after the location of the failure
- d) The surface area of the proposed repair product in contact with water, together with the diameter of the pipe or aqueduct, if appropriate
- e) Range of typical water flow rates
- f) Full details of the proposed equipment and products to be used to repair the system<sup>3</sup>, including whether these have approval by the Water Regulations Advisory Scheme; their [directory](#) of approved products<sup>4</sup> and materials
- g) When repairs will start, if known
- h) Action plan if the proposed repair is not acceptable

---

<sup>3</sup> To include full contact details and any specific instructions from the manufacturer

<sup>4</sup> An additional listing of approved water fittings is published by KIWA Quality Services Ltd, UK (UK Directory of Approved Water Fittings) available from their website .

## Annex A – Guidance on the Risk Assessment of Disinfectants for Emergency use

### A.1 Background

Water suppliers are reminded that if a substance not permitted under the relevant regulations is introduced into water, or if a substance that is permitted is used in a manner outside its authorised conditions of use, an offence may have been committed. regulation 31(4)(b)<sup>5</sup> permits the use of an unapproved substance, or of an approved substance in a way not in accordance with its authorised conditions of use, if the relevant Authorities are satisfied that the substance or product either alone or in combination with any other substance or product in the water is unlikely to affect adversely the quality of the water supplied. Before an unapproved substance is used, or an approved substance is used in an unapproved way, the relevant Authorities must be provided with sufficient information about the situation to enable him to form that opinion. The following process is designed to provide that information.

- Drinking water suppliers shall decide whether or not to use a disinfectant that is not approved for continuous use under the relevant Regulations, or to use such an approved disinfectant in a manner that does not comply with any condition of use must do so according to a documented method statement for the particular use, on the basis of a detailed risk assessment.
- **Any disinfectant expected to be used in respect of any one emergency use for more than 120 days in any 12 month period should first be approved for continuous use and must in any case be so approved before the 120 day period has expired. Approval is only possible in such a short time for active ingredients already listed as under Product Type 5 in relation to the BPD.**

### A.2 Guidance on risk assessment

The risk assessment and method statement shall include:

- the actions necessary to protect consumers (including vulnerable consumers) from any harmful effects of the disinfectant and/or the organisms being targeted
- documented contingency arrangements in case the actions are ineffective or prove impractical
- the maximum period of use
- the need to comply with the Biocidal Products Regulations (2001), especially regulation 15.

The drinking water supplier's appropriate Inspector (or in the case of private water supplies the relevant officer of the local authority) shall be notified, 10 working days in advance of use, and given brief details of any decision to use an emergency disinfectant before the disinfectant is used. If the Authorities (or local authority) form a view that adverse consequences are likely, they will so inform the water supplier, in the case of the authorities within five working days of notification.

The method statement, risk assessment and documents justifying the need to use an emergency disinfectant and the choice of emergency disinfectant, should be retained by the supplier and made available for any subsequent audit. Responsibility for using the emergency disinfectant in

---

<sup>5</sup> Regulation 33(3)(b) in Scotland; Regulation 30(4)(b) in Northern Ireland.

accordance with the regulatory requirements lies with the water supplier and the appropriate Authorities (or local authority) may subsequently investigate whether the water supplier has complied fully with the appropriate requirements of the relevant Regulations and may initiate enforcement action and/or proceedings if it is concluded that, in the circumstances pertaining, the supplier's actions were deficient in respect of complying with the regulatory requirement. In addition the Authorities (or local authority) may decide to notify HSE if it suspects that the requirements of the BPR may have been breached.

In an emergency, when these reporting times cannot be met without endangering the health of consumers, notification can be done by telephone. The Authorities will, on request from the water supplier, complete the assessment as soon as is reasonably practical. In such circumstances, private water suppliers should contact their local authority as soon as possible.

### **A.3 Risk Assessment Guidance**

The specific content and nature of the risk assessment is for the water supplier to decide, but when reviewing the risk assessment the appropriate Authority will check that it contains assessment of at least all of the following elements:

- a) the risks associated with the health hazard or other water quality problems requiring attention
- b) the risks associated with the proposed solution
- c) why a disinfectant meeting the requirements of the relevant regulations cannot be used, or cannot be used in conformity with its conditions of use
- d) whether the proposed actions comply with the requirements of the Biocidal Products Regulations
- e) the likely duration of emergency disinfection and dose level, and maximum values for duration and dose
- f) the actions to be taken to mitigate risks to all consumers from the organisms requiring the use of emergency disinfection
- g) the actions to be taken to mitigate the risks to all consumers from the use of the emergency disinfectant, including full consideration of vulnerable groups and individuals at specific risk, e.g. renal dialysis patients (both home and hospital based), children under the age of 1 year, etc.
- h) the robustness of the method statement
- i) the contingency actions to be taken if emergency disinfection proves ineffective or impractical
- j) what other risks are associated with the planned action

***plus*** an assessment of any other elements of risk identified by the water supplier.

## **Annex B - Guidance on the Emergency use of Existing Water Storage & Distribution Equipment**

### **B.1 Background**

The standards for drinking water quality and the requirements relating to the approval of substances and products in the current regulations also apply when water is made available other than by means of pipes, e.g. from a bowser in an emergency.

The Authorities have advised drinking water suppliers that the materials in contact with water in tankers, bowsers, static tanks and other containers will satisfy the requirements of the appropriate national regulations, providing that the water contact materials of construction, at the time it was purchased or leased, were:

- a) approved under the Water Regulations Advisory Scheme (WRAS) (or the former Water Byelaws Scheme) and was listed in the Water Fittings Materials Directory at that time **OR**
- b) the materials of construction were “food grade”.

Details on the approval of new equipment for use in emergencies are given earlier in this Advice Sheet – see Section 2.

### **B.2 Use of existing non-approved emergency equipment**

The following equipment may be acceptable for such emergency use without further testing provided that the surfaces in contact with water have been cleaned and disinfected before filling with drinking water and a sample of the contents have been shown to comply with the prescribed values for taste and odour in the appropriate regulations:

- a) Metallic mobile tankers, bowsers, static tanks and other containers (excluding bottled water) with the surfaces in contact with water made from stainless steel meeting the requirements of Section 3 of [Advice Sheet 5](#).
- b) Non-metallic mobile tankers, bowsers, static tanks and other containers (excluding bottled water) with the surfaces in contact with water that are of “food grade” and satisfy the requirements of the appropriate Plastic Materials and Articles in Contact with Food Regulations.

Note: full approval under the requirements of the national regulations will be required for permanent use in contact with water intended for human consumption – see [Advice Sheets 1](#) and [Advice Sheet 8](#).

The authorities are aware of concerns regarding the risk of contamination of such equipment after purchase and during storage and use. Water suppliers are responsible for ensuring that:

- all such equipment is in good condition and free from contamination,
- water suppliers shall have appropriate procedures and practices in place to safeguard against material degradation or ingress of contaminants that might have an adverse affect on water quality on deployment of the equipment during an incident or emergency.

### **B.3 Use of Leased Equipment in an Emergency**

In emergencies water suppliers may need to use leased equipment that is normally used for other purposes. The authorities have accepted that where equipment is leased and not owned by the water supplier, e.g. tankers, evidence about the suitability of water contact non-metallic materials may not be available. Where this evidence is not available the test specified in section B.4 below should be performed and a report of the testing kept on file for possible future reference.

In the case of tankers where water is in contact with stainless steel, it is accepted that providers will not be able to supply the relevant information, and the testing set out in “B.4” below may not be relevant.

In both cases the surfaces in contact with water shall be cleaned and disinfected before filling with drinking water and a sample of the contents shall be shown to comply with the prescribed values for taste, odour, colour and turbidity of the appropriate regulations.

### **B.4 Testing**

For any emergency equipment, constructed from materials other than stainless steel, where there is no evidence of prior testing (of water contact materials of construction of the equipment), the following test should be undertaken on a representative example of each product type held in stock.

Test leachates shall be prepared by filling or partially filling one example of each type of equipment with chlorinated drinking water (1mg/l free-chlorine) for a 24 hours static contact. Samples shall be taken and analysed for taste, odour, colour and turbidity in a manner complying with the requirements of the appropriate national regulations. Before assessment for taste and odour, de-chlorination of the water shall be undertaken.

In the case of hoses, total organic carbon (TOC) analysis should also be undertaken on an example of each product type held in stock.

A record of this testing (which can be undertaken either by the water supply company or its chosen test laboratory) and its satisfactory outcome will be accepted as evidence of compliance with the appropriate regulations where BS6920/WRAS records do not exist.