Managing Chemical Biological and Psychological Risks Ocupational Health

Lecture Title:
SDS Sheets

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Date: 16 September 2026

Undergraduate Diploma in
Occupational Health and Safety

What is an SDS?

An SDS (Safety Data Sheet) is a detailed document that provides information about the hazards, safe handling, storage, and emergency measures related to a chemical substance or mixture. It is a key part of chemical safety management in workplaces, labs, workshops, salons, and industries.

MSDS vs SDS

MSDS	SDS
Old terminology used in workplaces before 2012.	Introduced with the **Globally Harmonized System (GHS)** of Classification and Labeling of Chemicals.
Format and content were **not standardized** globally.	Fully standardized **16-section format**, making information **consistent worldwide**.
Could vary significantly between manufacturers or countries.	Provides **clear hazard classification, pictograms, and handling instructions**.
Contained information on hazards, handling, storage, but the order and detail were inconsistent.	Improves **communication of chemical hazards across borders**, making training, emergency response, and regulatory compliance easier.

Safety Data Sheet (SDS)

The SDS is the manufacturer's instruction manual for safe handling of a chemical

Section	16 Different
Section 1: Identification	Product identifier, supplier details, emergency phone
SECTION 2: HAZARDS IDENTIFICATION	GHS classification, hazard statements, pictograms, signal word
SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS	Chemical identity of hazardous ingredients, concentrations
SECTION 4: FIRST AID MEASURES	Symptoms and effects, immediate medical attention required
SECTION 5: FIREFIGHTING MEASURES	Suitable extinguishing media, specific hazards, protective equipment
SECTION 6: ACCIDENTAL RELEASE MEASURES	Personal precautions, environmental precautions, containment methods
SECTION 7: HANDLING AND STORAGE	Safe handling practices, storage conditions, incompatibilities

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION	Occupational exposure limits, engineering controls, PPE
SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES	Appearance, odour, pH, flash point, etc.
SECTION 10: STABILITY AND REACTIVITY	Chemical stability, hazardous reactions, conditions to avoid
SECTION 11: TOXICOLOGICAL INFORMATION	Routes of exposure, symptoms, acute and chronic effects
SECTION 12: ECOLOGICAL INFORMATION	Environmental effects, persistence, bioaccumulation
SECTION 13: DISPOSAL CONSIDERATIONS	Waste treatment methods, disposal precautions
SECTION 14: TRANSPORT INFORMATION	UN number, transport hazard class, packing group
SECTION 15: REGULATORY INFORMATION	Specific regulations applicable to the substance
SECTION 16: OTHER INFORMATION	Date of preparation, revisions, key to abbreviations

SAFETY DATA SHEET

Finish Dishwasher Deep Cleaner Active

reckitt

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

1.1 Product identifier

Product name	:	Finish Dishwasher Deep Cleaner Active
SDS #	:	D0024562
Formulation #	:	0347178, 3286377, 3221916, 3221910
Product type	:	Liquid

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

Identified uses
Machine dishwashing (powder, liquid, tablet) for consumer use

1.3 Details of the supplier of the safety data sheet

Supplier

The United Kingdom:
RB UK Hygiene Home Commercial Ltd Wellcroft House
Wellcroft Road Slough, Berkshire SL1 4AQ
Tel: 0800 376 8181
Email: ConsumerCare_UK@reckitt.com

The Republic Of Ireland:
RB Ireland Hygiene Home Commercial Ltd 7 Riverwalk
Citywest Business Campus Dublin 24
Ireland
Tel: 01 661 7318
Email: ConsumerHealth_IE@reckitt.com

1.4 Emergency telephone number

National advisory body/Poison Centre

Telephone number : **GB** - NHS 111/NHS 24 Tel: 111
NI - www.gpoutofhours.hscni.net/
IE - Poisons Information Centre of Ireland: 01 809 2166 8am-10pm 7 days a week

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Product definition : Mixture

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

Skin Irrit. 2, H315
Eye Dam. 1, H318

The product is classified as hazardous according to Regulation (EC) 1272/2008 as amended.

See Section 16 for the full text of the

See Section 11 for more detailed inf

SECTION 2: Hazards identification

Hazard pictograms :

Signal word : Danger

Hazard statements : Causes skin irritation.
Causes serious eye damage.

Precautionary statements

General : Keep out of reach of children. If medical advice is needed, have product container or label at hand.

Prevention : Not applicable.

Response : IF ON SKIN: Wash with plenty of water. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or doctor/physician.

Storage : Not applicable.

Disposal : Not applicable.

Hazardous ingredients : TRIDECETH-3

Supplemental label elements : **Ingredient Declaration:**

5 - < 15 % non-ionic surfactants,

Perfumes

Special packaging requirements

Containers to be fitted with child-resistant fastenings : Not applicable.

Tactile warning of danger : Not applicable.

2.3 Other hazards

Product meets the criteria for PBT or vPvB according to Regulation (EC) No. : This mixture does not contain any substances that are assessed to be a PBT or a vPvB.

SECTION 3: Composition/information on ingredients

3.2 Mixtures : Mixture

Product/ingredient name	Identifiers	%	Classification	Specific Conc. Limits, M-factors and ATEs	Type
CITRIC ACID	REACH #: 01-2119457026-42 EC: 201-069-1 CAS: 77-92-9	≥10 - <20	Eye Irrit. 2, H319 STOT SE 3, H335	-	[1]
Isotridecanol, ethoxylated	REACH #: 01-2119976362-32 EC: 500-241-6 CAS: 69011-36-5	≤10	Skin Irrit. 2, H315 Eye Dam. 1, H318 Aquatic Chronic 3, H412	-	[1]

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SECTION 4: First aid measures

4.1 Description of first aid measures

Eye contact : Get medical attention immediately. Call a poison center or physician. Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Chemical burns must be treated promptly by a physician.

Inhalation : Get medical attention immediately. Call a poison center or physician. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

Skin contact : Get medical attention immediately. Call a poison center or physician. Wash contaminated skin with soap and water. Remove contaminated clothing and shoes. Wash contaminated clothing thoroughly with water before removing it, or wear gloves. Continue to rinse for at least 10 minutes. Chemical burns must be treated promptly by a physician. Wash clothing before reuse. Clean shoes thoroughly before reuse.

Ingestion : Get medical attention immediately. Call a poison center or physician. Wash out mouth with water. Remove dentures if any. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Chemical burns must be treated promptly by a physician. Never give anything by mouth to an unconscious person.

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media : Use an extinguishing agent suitable for the surrounding fire.

Unsuitable extinguishing media : None known.

5.2 Special hazards arising from the substance or mixture

Hazards from the substance or mixture : No specific fire or explosion hazard.

Hazardous combustion products : Decomposition products may include the following materials:
carbon dioxide
carbon monoxide

5.3 Advice for firefighters

Special protective actions for fire-fighters : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.

Special protective equipment for fire-fighters : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode. Clothing for fire-fighters (including helmets, protective boots and gloves) conforming to European standard EN 469 will provide a basic level of protection for chemical incidents.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

For non-emergency personnel : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Do not breathe vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.

For emergency responders : If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

6.2 Environmental precautions : Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

6.3 Methods and materials for containm

SECTION 6: Accidental release measures

Small spill : Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.

Large spill : Stop leak if without risk. Move containers from spill area. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations. The spilled material may be neutralized with sodium carbonate, sodium bicarbonate or sodium hydroxide. Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product.

SECTION 7: Handling and storage

The information in this section contains generic advice and guidance. The list of Identified Uses in Section 1 should be consulted for any available use-specific information provided in the Exposure Scenario(s).

7.1 Precautions for safe handling

Protective measures	:	Put on appropriate personal protective equipment (see Section 8). Do not get in eyes or on skin or clothing. Do not breathe vapor or mist. Do not ingest. If during normal use the material presents a respiratory hazard, use only with adequate ventilation or wear appropriate respirator. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Keep away from alkalis. Empty containers retain product residue and can be hazardous. Do not reuse container.
Advice on general occupational hygiene	:	Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

8.2 Exposure controls

Appropriate engineering controls : If user operations generate dust, fumes, gas, vapor or mist, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits.

Individual protection measures

Hygiene measures : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Eye/face protection : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists gases or c
unless the
goggles a
required i

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SECTION 8: Exposure controls/personal protection

use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.

Body protection : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Other skin protection : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Respiratory protection : Based on the hazard and potential for exposure, select a respirator that meets the appropriate standard or certification. Respirators must be used according to a respiratory protection program to ensure proper fitting, training, and other important aspects of use.

Environmental exposure controls : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

SECTION 11: Toxicological information

11.1 Information on hazard classes as defined in Regulation (EC) No 1272/2008

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
CITRIC ACID Isotridecanol, ethoxylated	LD50 Oral LD50 Dermal LD50 Oral	Rat Rabbit Rat	11700 mg/kg >2000 mg/kg >5000 mg/kg	- - -

Conclusion/Summary : Based on available data, the classification criteria are not met.

Acute toxicity estimates

SECTION 12: Ecological information

12.1 Toxicity

Product/ingredient name	Result	Species	Exposure
CITRIC ACID	Acute LC50 160000 µg/l Marine water	Crustaceans - Carcinus maenas - Adult	48 hours
Isotridecanol, ethoxylated	Chronic NOEC 1.73 mg/l	Fish	-

Conclusion/Summary : Based on available data, the classification criteria are not met.

12.2 Persistence and degradability

Product/ingredient name	Test	Result	Dose	Inoculum

SECTION 13: Disposal considerations

The information in this section contains generic advice and guidance. The list of Identified Uses in Section 1 should be consulted for any available use-specific information provided in the Exposure Scenario(s).

13.1 Waste treatment methods

Product

Methods of disposal : The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction.

SECTION 14: Transport information

14.6 Special precautions for user : **Transport within user's premises:** always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

SECTION 15: Regulatory information

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

EU Regulation (EC) No. 1907/2006 (REACH)

Annex XIV - List of substances subject to authorization

Annex XIV

None of the components are listed.

Substances of very high concern

None of the components are listed.

Annex XVII - Restrictions on the manufacture placing on the mark : None.

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SECTION 16: Other information

H315	Causes skin irritation.
H318	Causes serious eye damage.
H319	Causes serious eye irritation.
H335	May cause respiratory irritation.
H412	Harmful to aquatic life with long lasting effects.

Full text of classifications [CLP/GHS]

Aquatic Chronic 3	AQUATIC HAZARD (LONG-TERM) - Category 3
Eye Dam. 1	SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 1
Eye Irrit. 2	SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 2
Skin Irrit. 2	SKIN CORROSION/IRRITATION - Category 2

Case Study 1

A student is applying Evo-Stik All Purpose Silicone Sealant to seal window edges in a small, enclosed room with no ventilation. After 20 minutes, the student begins to feel dizzy and experiences eye irritation due to vapor buildup. While trying to continue working, the student accidentally rubs their eyes with contaminated hands, worsening the irritation. Shortly after, they feel unwell and need to leave the area.

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1. Evaluate the incident using a **risk assessment approach**: what factors (environment, behavior, and procedures) combined to increase the level of risk?
2. If you were the supervisor, how would you **redesign the task and work environment** to prevent recurrence, applying the **hierarchy of controls** (not just PPE)?

Case Study 2

A student is cleaning floors using Astonish Floor Cleaner but uses it undiluted instead of following instructions. While mopping, the student works without gloves and is exposed to the concentrated solution for an extended period. They begin to develop redness and irritation on their hands. At the same time, excess product left on the floor creates a slippery surface, causing another student to slip and fall.

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1. Identify what went wrong
2. Refer to the SDS for correct procedures
3. What **preventive measures** (including PPE and correct procedures) should be followed to avoid both chemical exposure and slip hazards?

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