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Matters related to the implementation of the Convention: scientific and technical matters: technical guidelines

Technical guidelines

Addendum

Technical guidelines on the environmentally sound management of wastes consisting of, containing or contaminated with UV-328

Note by the Secretariat

As is mentioned in the note by the Secretariat on technical guidelines (UNEP/CHW.17/5), the annex to the present note sets out the draft technical guidelines on the environmentally sound management of wastes consisting of, containing or contaminated with UV-328 which was prepared by the Secretariat, in consultation with the small intersessional working group on persistent organic pollutant wastes, for consideration by the Conference of the Parties. The present note, including its annex, has not been formally edited.

* UNEP/CHW.17/1.

Annex

Technical guidelines on the environmentally sound management of wastes consisting of, containing or contaminated with UV-328

(Draft version of 18 December 2024)

Contents

Abbreviations and acronyms

ABS	acrylonitrile butadiene styrene
CAS	Chemical Abstracts Service
ECHA	European Chemicals Agency
ESM	environmentally sound management
EVA	ethylene vinyl acetate
HDPE	high-density polyethylene
LDPE	low-density polyethylene
LLDPE	linear low-density polyethylene
OECD	Organization for Economic Co-operation and Development
PC	polycarbonate
PE	polyethylene
PET	polyethylene terephthalate
POP	persistent organic pollutant
POPRC	Persistent Organic Pollutants Review Committee
PP	polypropylene
PS	polystyrene
PUR	polyurethane
PVC	polyvinyl chloride
UNEP	United Nations Environment Programme
UV	ultraviolet
UV-328	2-(2*H*-Benzotriazol-2-yl)-4,6-bis(2-methylbutan-2-yl)phenol
WWTPs	wastewater treatment plants

Units of measurement

mg/kg	milligram(s) per kilogram. Corresponds to parts per million (ppm) by mass
µg/kg	microgram(s) per kilogram. Corresponds to parts per billion (ppb) by mass
t/a	tonne(s) per annum, tonne(s) per year

I. Introduction

A. Scope

1. The present technical guidelines provide guidance on the environmentally sound management (ESM) of wastes consisting of, containing or contaminated with UV-328, pursuant to several decisions adopted by the bodies of two multilateral environmental agreements on chemicals and wastes.[1]

2. UV-328 was listed in Annex A (elimination) to the Stockholm Convention on Persistent Organic Pollutants in 2023, through an amendment that entered into force in 2025.

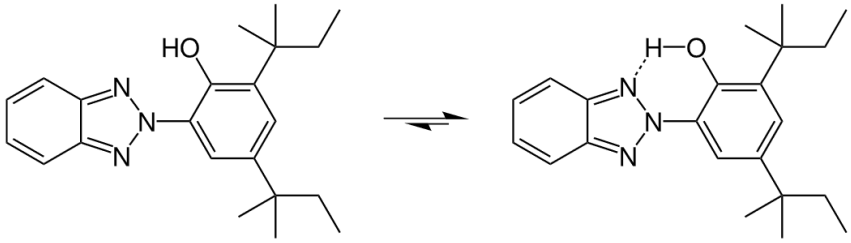
3. The present technical guidelines should be used in conjunction with the General technical guidelines on the environmentally sound management of wastes consisting of, containing or contaminated with persistent organic pollutants" (UNEP, [2025]) (hereinafter referred to as "General technical guidelines"). The General technical guidelines are intended to serve as an umbrella guide for the ESM of wastes consisting of, containing or contaminated with persistent organic pollutants (POPs).

B. Description, production, use and wastes

1. Description

4. UV-328 is a phenolic benzotriazole that is substituted with two *tert*-pentyl groups at the 4th and 6th position of its phenolic moiety. UV-328 absorbs the full spectrum of UV light in a fully reversible and non-destructive process (ECHA, 2014). It is therefore used as a UV absorber to protect surfaces from discoloration and degradation under UV/sunlight. In its physical state it is a yellow powder. UV-328 does not occur naturally in the environment. It has been found in various environmental matrices as a result of anthropogenic activities and is associated with adverse health effects based on findings from toxicity studies (UNEP, 2022a; UNEP, 2022b). Table 1 shows the chemical identifiers and structural formulas of UV-328.

Table 1: Chemical identifiers and structural formulas of UV-328.

Common name	UV-328
IUPAC name	2-(2*H*-Benzotriazol-2-yl)-4,6-bis(2-methylbutan-2-yl)phenol
CAS name	Phenol, 2-(2*H*-benzotriazol-2-yl)-4,6-bis(1,1-dimethylpropyl)-
CAS number	25973-55-1
EC number	247-384-8
Molecular formula	$C_{22}H_{29}N_3O$
Molecular weight	351.5 g/mol
Substance type	Mono-constituent
Degree of purity	≥ 80 – 100% (w/w)
Structural formulas (left: open form; right: closed form)	

[1] Decision BC-16/3 of the Conference of the Parties to the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and Their Disposal; decision OEWG-[XX/X] of the Open-ended Working Group (OEWG) of the Basel Convention; and decision SC-11/11 of the Conference of the Parties to the Stockholm Convention on Persistent Organic Pollutants.

2. Production

5. Parties to the Stockholm Convention shall prohibit and/or eliminate the production of UV-328 in accordance with part I of Annex A to the Stockholm Convention, unless they have notified the Secretariat of their intention to produce it for the time-limited specific exemptions listed in Part XII of Annex A to the Convention. Information on production of UV-328 can be found in the register of specific exemptions of the Stockholm Convention on the Convention website (www.pops.int). Information on the status of ratification by the Parties of the amendment listing UV-328 in the Stockholm Convention can be found on the website of the Treaty Section of the United Nations (https://treaties.un.org/). In addition, Parties for which the amendment did not enter into force automatically may continue to produce UV-328 for any purpose until they have ratified the amendment through which the chemical was listed in Annex A.

6. The earliest known production of UV-328 began in the 1960s (SGS, 2006). No time trends are publicly available regarding the global production of UV-328 since production began. UV-328 is used in large quantities globally. According to the OECD Existing Chemicals Database, UV-328 is designated as a high production volume chemical (HPVC), with production > 1000 tonnes per annum (t/a). Worldwide, there are 77 suppliers of UV-328 (UNEP, 2022b), of which 9 are European suppliers (ECHA, 2020). The UV-328 supply chain may be complex as manufacturers mainly provide masterbatches containing UV-328 to converters for further processing. The converters supply plastics to producers who deliver final plastic products to the end users (ECHA, 2020).

7. According to the risk management evaluation for UV-328 (UNEP, 2022b), data on specific production volumes at the national level is limited. Most of the countries for which data is available import UV-328 instead of producing it domestically.

3. Use[2]

8. Parties to the Stockholm Convention shall prohibit and/or eliminate the use of UV-328 in accordance with part I of Annex A to the Stockholm Convention, unless they have notified the Secretariat of their intention to use UV-328 for a time-limited specific exemption listed in Annex A to the Convention. Information on use of the exemptions can be found in the register of specific exemptions of the Stockholm Convention on the Convention website (www.pops.int). Information on the status of ratification by the Parties of the amendment listing UV-328 in the Stockholm Convention can be found on the website of the Treaty Section of the United Nations (https://treaties.un.org/). In addition, Parties for which the amendment did not enter into force automatically may continue to use UV-328 for any purpose until they have ratified the amendment through which the chemical was listed in Annex A.

9. UV-328 is used as a UV absorber to protect surfaces from discoloration and degradation under UV/sunlight. Main uses are in surface coatings and paints (e.g., clear coat automotive finishes), and as an additive in plastics (e.g., transparent plastics, food packaging). It is also used in printing inks and adhesives used in food contact materials (in the non-food contact layer of plastic food packaging) (UNEP, 2022b).

10. UV-328 has been recommended as a UV absorber for polyolefins, polyurethanes, rigid and flexible polyvinyl chloride (PVC), polyacrylate, epoxy and elastomers (UNEP, 2022a). It is also used for light stabilization in acrylonitrile butadiene styrene (ABS) resin, epoxy resin, fiber resin, polypropylene (PP), polystyrene (PS), unsaturated polyesters, polyacrylate and polycarbonate (PC). UV-328 is used as a UV stabilizer in plastic shrink films. Typical recommended concentrations of UV-328 in coatings are between 1% and 10% and in plastics between 0.1% and 1% (Table 2; UNEP, 2022b).

11. UV-328 is used in automotive paints and coatings (clear coat automotive finishes), to a minor degree as a sealant in the manufacture of automobiles, but also in hydraulic liquids in automotive suspensions and in lubricants in motor oil and break fluids (Denghel, 2021) and industrial sealants in aftermarket automotive products (UNEP, 2022b). Japan Auto Parts Industries Association (JAPIA) has reported that UV-328 has three main uses in the automobile sector: 1) in optical polarizing plate and polarizing film for liquid crystal panels (of the super twisted nematic type) and meters mounted on vehicles, 2) in paint and 3) in resin used for interior and exterior parts (e.g. door handles and levers) (JAPIA, 2021). In the aftermarket automotive products (including motorcycles) sector the main parts containing UV-328 are estimated to be the bumper systems, radiator grills, spoilers, car garnish, roof modules, soft/hard tops, trunk lids and rear window wipers, as well as polarizing films of interior

[2] "Use" covers the use of UV-328 mixtures for the production of products and articles, as well as the use of those products and articles.

displays. These are usually exterior vehicle parts that are exposed to light and therefore typically contain a light stabilizer. Replacement parts containing UV-328 are also used for industrial machines (agricultural machinery, construction machinery, medical equipment, electric and electronic instruments (UNEP, 2022b).

12. UV-328 is furthermore used in cooling liquids in refrigerators, in oil-based electric heaters, construction materials requiring UV-protection, fillers, surface treatments of articles to increase the UV resistance (e.g. coatings), adhesives, paints/lacquers/varnishes, thinners, paint removers, consumer fragrances, fabric/textile/leather products, inert pesticides, and is used as a corrosion inhibitor (anti-corrosion agent), in polishes for metal surfaces, as well as for the gravimetric determination of metals such as copper, silver and zinc. Due to it being a UV absorber, it is especially used in outdoor products made from metal, wood and plastic. However, it can also be found in indoor products such as furniture, toys, footwear, paper and cardboard articles, flooring and electronic equipment (Denghel, 2021; ECHA, 2020; UNEP, 2022b). It is currently not possible to identify the UV-328-containing consumer products without laboratory analysis.

Table 2: Examples of concentrations of UV-328 in materials and articles.

Material	UV-328 content (mg/kg)	Source
Recommended concentrations		
Plastics	1000-10 000 1500-30 000 (PC) 2000-4000 (PE) 3000-6000 (PP) 2000-5000 (PS) 3000 (flexible PVC) 5000 (rigid PVC) 2000-5000 (polyesters) 1500-10 000 (polyacrylate) 3000-10 000 (PUR)	Hunan Chemical BV (2016) IGM Resins B.V. (2013) Disheng Technology (2017) IGM Resins B.V. (2013) Disheng Technology (2017) IGM Resins B.V. (2013) IGM Resins B.V. (2013) Disheng Technology (2017), IGM Resins B.V. (2013) IGM Resins B.V. (2013) IGM Resins B.V. (2013)
Coatings	10 000-30 000 Up to 100 000 (consumer use automotive clearcoat finish and topcoat glaze for boats)	Hangzhou Sunny Chemical Corp Ltd., (2003) ECCC and Health Canada (2016)
Paints	1000-10 000 (automotive sector resin and paint)	JAPIA (2021)
Adhesives, sealants, printing inks	1000-100 000	UNEP (2022b)
Textiles/Leather	1000-100 000 Typical loading unknown	UNEP (2022b)
Measured concentrations[3]		
Plastics	730 (traffic cone) 136 and 160 (two golf balls) 25-76 (milk and snack packaging with other UV absorbers) 13.9 (LDPE packaging) 2 (PET beverage packaging) 0.3-1 (hair accessories) 0.2-1.6 (marine plastic debris) 0.02-46.8 (toys) 0.005 (plastic mulch film) 0.003-0.4 (newly-produced PP, PE, PET) 0.002-0.9 (beached plastic pellets: PE) 0.0007-0.001 (biodegradable mulch film) 0.0001-0.3 (recycled HDPE) 0.00003–1.0 (beached plastic pellets: PP)	Awonaike et al. (2021) Awonaike et al. (2021) Zhang et al. (2016) Chang et al. (2013) Chang et al. (2013) Karlsson et al. (2022) Rani et al. (2015); Tanaka et al. (2020) Karlsson et al. (2022) Wu et al. (2024) Rani et al. (2017) Karlsson et al. (2021, 2022) Yao et al. (2023) Brosché et al. (2021) Matsunaga et al. (2023)

[3] Some figures have been rounded for readability.

Material	UV-328 content (mg/kg)	Source
Textiles/Leather	0.008 and 0.11 (two samples of cotton)	Avagyan et al. (2015)

4. Wastes

13. Action aimed at waste streams of importance in terms of volume and concentration will be essential to eliminating, reducing and controlling the environmental load of UV-328 from waste management activities. In that context, the following should be recognized:

(a) Releases of UV-328 occur during all life cycle stages as UV-328 is not chemically bound to materials by covalent bonds: production, manufacturing, transportation and final use of the substance as well as during the use, disposal and end-of-life treatment of products containing UV-328 (UNEP, 2022b). Processes such as abrasion, leaching and volatilization may result in the release of UV-328 from products into the environment;

(b) UV-328 is used in various consumer products like cars, motorcycles, textile and leather articles, footwear, (indoor and outdoor) furniture, toys, fragrances, cosmetics, food contact materials and packaging, but also paints and coatings, adhesives and sealants, construction materials, flooring, paper and cardboard articles, and electronic equipment (UNEP, 2022b; Denghel, 2021). It is currently not possible to identify the UV-328-containing consumer products without laboratory analysis;

(c) Major sources of UV-328 entering the environment are industrial and municipal wastewater and wastewater treatment plants (WWTPs), sewage sludge (WWTPs biosolids used as fertilizers), landfill leachate, and storm water (UNEP, 2022b);

(d) One of the main uses of UV-328 is as an additive in plastics and significant amounts of plastics are released to the oceans every year which originate both from terrestrial and ocean-based sources (UNEP, 2022b). UV-328 has been detected in fragments of marine plastic debris as well as in plastic ingested by seabirds. Plastic litter containing UV-328 might represent the main source of UV-328 in the marine environment. Additionally, UV-328 has been detected in industrial plastic pellets collected along beaches around the world (Karlsson et al., 2021, 2022). Although it is uncertain if UV-328 was adsorbed or in the matrix, lost pellets could be a potential waste stream for UV-328;

(e) There is a high potential for UV-328 to be reintroduced into the economic cycle via the recycling of plastics. UV-328 have already been found in recycled HDPE (Brosché et al., 2021) and the substance has also been identified in recycled PET destined for the use in food contact material (Dutra et al., 2014).

14. Wastes may contain variable concentrations of UV-328, depending on the quantities in which they were originally present in specific products and the quantities released during product use and waste management. Waste consisting of, containing or contaminated with UV-328 (hereinafter referred to as “UV-328 wastes”) may be found as:

(a) UV-328 chemical:

(i) Pure UV-328;

(ii) Obsolete UV-328 which can no longer be used;

(b) UV-328 mixtures (products):

(i) Coatings, paints;

(ii) Adhesives, sealants;

(iii) Printing inks;

(iv) Resins;

(v) UV-328 containing pellets (nurdles) and masterbatches;

(vi) Hydraulic liquids in automotive suspensions;

(vii) Lubricants in motor oil and break fluids;

(viii) Cooling liquids in refrigerators;

(c) UV-328 mixture packaging materials:

(i) UV-328 packaging;

(ii) UV-328 mixture packaging;

(d) UV-328 containing articles:

(i) Food packaging;

(ii) Components and parts of vehicles and machinery such as bumper systems, radiator grills;

(iii) Textile and leather products, footwear;

(iv) Construction materials such as flooring;

(v) Indoor and outdoor furniture;

(vi) Cosmetic products, fragrances, toys;

(vii) Paper and cardboard articles;

(viii) Electrical and electronic equipment.

(e) Contaminated soils;

(f) Municipal and industrial wastewater;

(g) Municipal and industrial sludge and landfill leachate.

15. The most important UV-328 waste streams in terms of potential volume are expected to be:

(a) Plastic waste, including food packaging waste;

(b) UV protection coatings for cars, wood;

(c) Components and parts of vehicles and machinery such as bumper systems, radiator grills;

(d) Construction waste contaminated with UV-328 in paints, sealants, adhesives and flooring;

(e) Consumer articles such as textile and leather articles, footwear, cosmetics, toys.

16. The most important UV-328 waste streams in terms of potential releases or concentration of UV-328 are expected to be:

(a) UV-328 chemical waste;

(b) Waste from UV-328 production;

(c) UV-328 mixtures (UV-328 pellets, masterbatches);

(d) Plastic containing UV-328 as an additive;

(e) Coatings, paints, adhesives and sealants;

(f) Plastic articles containing UV-328;

(g) Leather and textiles.

17. UV-328 wastes can be generated in a diverse range of applications, at different stages of life cycle and through different release media. Knowledge of release media guides the analysis and choice of methods that may be used to manage such wastes. Table 3 provides an overview of relevant information regarding the life cycle of wastes containing UV-328.

Table 3: Overview of the production and application of UV-328 and their release media into the environment (based on UNEP, 2022a; UNEP, 2022b).

Group	Source materials /Substance used	Applications /Processes	End product	Release media
UV-328 PRODUCTION				
Chemical production	[To be confirmed]	Chemical synthesis	UV-328	• Solid waste (including filtration sludge) • Landfill leachate • Waste water • Sludge • Air
PRODUCTION OF FORMULATIONS AND ARTICLES USING UV-328 (The boxes below include articles that have become wastes. Such wastes may also be generated at production sites, such as leftovers, cutting waste, etc.)				
Plastics	Raw materials (e.g., ethylene, propylene, vinyl acetate, acrylonitrile, butadiene, styrene, isocyanate, polyhydric alcohols, polystyrene, prolene, butanediol, terephthalate, ethylene glycol, terephthalic acid, hexamethylenediamine and adipic acid) UV-328 and other additives	Polymer production and compounding Plastic conversion (moulding and extrusion)	UV absorber containing polymers: • polyolefins (LDPE, LLDPE, HDPE, PP) • styrenics (PS, ABS resin) • engineering thermoplastics (PC) • thermosets (fiber resin, epoxy resin) • elastomers (PUR) • waterborne emulsions and coatings • rigid and flexible PVC • unsaturated polyesters Packaging: • PET packaging • LDPE packaging • adhesives and printing inks used in food packaging	• Solid waste • Landfill leachate • Liquid industrial and household cleaning waste • Wastewater • Sludge • Air

Group	Source materials /Substance used	Applications /Processes	End product	Release media
Vehicles Industrial machines	Plastics containing UV-328 Resin used for interior and exterior parts Paints and coatings Rubbers Adhesives and sealants Hydraulic liquids and lubricants	Manufacturing of vehicles, including cars, motorcycles, boats Manufacturing of parts for vehicles Manufacturing of parts for industrial and maintenance machines	Articles used in manufacturing of cars, motorcycles, boats. Examples include: • Bumper systems • Radiator grilles • Spoilers • Car garnish • Roof modules and soft/hard tops • Trunk lids • Rear window wipers • Door handles and levers • Liquid crystal panels and meters mounted on vehicles • Polarizing films of interior displays Premium topcoats Hydraulic liquids in suspensions Lubricants in motor oil and brake fluid Spare parts used in industrial machines such as agricultural machinery, construction machinery	• Solid waste • Landfill leachate • Liquid industrial and household cleaning waste • Wastewater • Sludge • Air
Coatings and paints	Coating resin	Manufacturing of coatings and paints	UV protective coatings and paints for plastic, wood, metal surfaces	• Solid waste • Construction waste • Landfill leachate • Liquid industrial and household waste • Wastewater • Sludge • Air
Printing inks	UV-328	Manufacturing of printing inks	Food contact materials and articles	• Solid waste • Landfill leachate • Liquid industrial and household cleaning waste • Wastewater • Sludge • Air
Textiles and fabric	UV-328 containing chemical fibers UV-328 finishing on fabric	Manufacturing of textiles and fabric with UV protective properties	Synthetic polymer clothing and fabric (nylon) Cotton clothing, including articles for babies, toddlers, and children	• Solid waste • Landfill leachate • Liquid industrial and household cleaning waste • Wastewater • Sludge • Air

Group	Source materials /Substance used	Applications /Processes	End product	Release media
Adhesives and sealants	UV-328 containing adhesives and sealants	Manufacturing of adhesives and sealants	Colour stable adhesives with retention of adhesive properties used in building and construction, automotive, transportation and medical sectors, industrial assemblies, wood	• Solid waste • Construction waste • Liquid industrial and household waste • Landfill leachate • Wastewater • Sludge • Air
Construction materials	UV-328 + polymer	Manufacturing of construction materials	Thermoplastic polymer applications such as PVC roofing membrane Roof modules Liquid waterproofing applications Materials covered with paint and coating	• Solid waste • Liquid industrial and household waste • Landfill leachate • Wastewater • Sludge • Air
Cosmetics	UV-328	Production of UV protective articles	Sunscreen, fragrances, personal care products	• Solid waste • Landfill leachate • Liquid industrial and household waste • Wastewater • Sludge • Air
Electronics		Manufacturing of UV-328 containing components for electronics	LCD displays Roof lights Medical equipment	• Industrial and household solid waste • Landfill leachate • Wastewater • Sludge • Air

II. Relevant provisions of the Basel and Stockholm Conventions

A. Basel Convention

18. According to article 1 (“Scope of the Convention”), the Basel Convention covers two types of waste subject to transboundary movement: “hazardous wastes” and “other wastes”. Paragraph 1 of Article 1 reads as follows:

(a) Wastes that belong to any category contained in Annex I, unless they do not possess any of the characteristics contained in Annex III; and

(b) Wastes that are not covered under paragraph (a) but are defined as, or are considered to be, hazardous wastes by the domestic legislation of the Party of export, import or transit.”

19. As stated in Article 1, paragraph 2, “Wastes that belong to any category contained in Annex II that are subject to transboundary movement shall be “other wastes” for the purposes of this Convention.

20. Annex I and II list some of the wastes which may consist of, contain or be contaminated with UV-328:

(a) Y1: Clinical wastes from medical care in hospitals, medical centers and clinics;

(b) Y5: Wastes from the manufacture, formulation and use of wood preserving chemicals;

(c) Y9: Waste oils/water, hydrocarbons/water mixtures, emulsions;

(d) Y12: Wastes from production, formulation and use of inks, dyes, pigments, paints, lacquers, varnish;

(e) Y13: Wastes from production, formulation and use of resins, latex, plasticizers, glues/adhesives;

(f) Y16: Wastes from production, formulation and use of photographic chemicals and processing materials;

(g) Y17: Wastes resulting from surface treatment of metals and plastics;

(h) Y18: Residues arising from industrial waste disposal operations;

(i) Y39: Phenols; phenol compounds including chlorophenols;

(j) Y46: Wastes collected from households;

(k) Y48: Plastic waste, including mixtures of such waste, with exceptions listed in the Annexes to the Convention;[4]

(l) Y49[5]: Electrical and electronic waste.[6]

21. Annex I wastes are presumed to exhibit one or more Annex III hazard characteristics, which may include H11 "Toxic (Delayed or chronic)"; H12 "Ecotoxic"; or H13 "Capable, by any means, after disposal, of yielding another material, e.g. leachate, which possesses any of the characteristics listed above", unless, through "national tests," they can be shown not to exhibit these characteristics. National tests may be useful for identifying a particular hazardous characteristic in Annex III of the Convention until such time as the hazardous characteristic is fully defined. Guidance documents for Annex III hazardous characteristics H11, H12 and H13 were adopted on an interim basis by the Conference of the Parties to the Basel Convention at its sixth and seventh meetings.

22. At its fourth meeting in February 1998, the Conference of the Parties added two lists of wastes as two new annexes to the Convention, namely Annex VIII (list A) and Annex IX (list B). These were intended to provide greater certainty and clarity to the entries. List A and List B are kept under review by the Conference of the Parties; in addition, a process was established under Decision BC VIII/15 of the Conference of the Parties to the Basel Convention to facilitate the identification and agreement on new entries.

23. List A of Annex VIII of the Basel Convention describes wastes that are "characterized as hazardous under Article 1, paragraph 1 (a), of this Convention." However, "their designation of a waste on this Annex does not preclude, in a particular case, the use of Annex III ("List of hazardous characteristics") to demonstrate that a waste is not hazardous" (Annex I, paragraph (b)). However, Annex I and Annex III remain the factors to characterize wastes as hazardous for the purpose of this Convention, and that List A and List B are not intended to be exhaustive. List A of Annex VIII includes a number of wastes or waste categories that have the potential to contain or be contaminated with UV-328, including:

(a) A1180: Waste electrical and electronic assemblies or scrap[7] containing components such as accumulators and other batteries included on list A, mercury-switches, glass from cathode-ray tubes and other activated glass and PCB-capacitors, or contaminated with Annex I constituents (e.g., cadmium, mercury, lead, PCB) to an extent that they possess any of the characteristics contained in Annex III (note the related entry on list B, B1110);[8]

(b) A1181: Electrical and electronic waste (note the related entry Y49 in Annex II);[9,10]

[4] Refer to Annexes II and IX of the Basel Convention for a full description of this entry.

[5] Note the related entry on list A A1181 in Annex VIII.

[6] Refer to Annex II of the Basel Convention for a full description of this entry.

[7] This entry does not include scrap assemblies from electric power generation.

[8] Entry A1180 will no longer exist from 1 January 2025, except where one or more Parties to the Basel Convention have notified, according to Article 18(2)(b) of the Convention, that they are unable to accept the e-waste amendments referred to in Decision BC-15/18.

[9] PCBs or PBBs are at a concentration level of 50 mg/kg or more in equipment, in a component, or in wastes arising from the processing of waste electrical and electronic equipment or waste components of electrical and electronic equipment.

[10] Refer to Annex VIII of the Basel Convention for a full description of this entry.

(c) A1190: Waste metal cables coated or insulated with plastics containing or contaminated with coal tar, PCB, lead, cadmium, other organohalogen compounds or other Annex I constituents to an extent that they exhibit Annex III characteristics;

(d) A3040: Waste thermal (heat transfer) fluids;

(e) A3050: Wastes from production, formulation and use of resins, latex, plasticizers, glues/adhesives excluding such wastes specified on list B (note the related entry on list B B4020);

(f) A3070: Waste phenols, phenol compounds including chlorophenol in the form of liquids or sludges;

(g) A3120: Fluff-light fraction from shredding;

(h) A3210: Plastic waste, including mixtures of such waste, containing or contaminated with Annex I constituents, to an extent that it exhibits an Annex III characteristic (note the related entries Y48 in Annex II and on list B B3011);

(i) A4020: Clinical and related wastes; that is wastes arising from medical, nursing, dental, veterinary, or similar practices, and wastes generated in hospitals or other facilities during the investigation or treatment of patients, or research projects;

(j) A4060: Waste oils/water, hydrocarbons/water mixtures, emulsions;

(k) A4070: Wastes from the production, formulation and use of inks, dyes, pigments, paints, lacquers, varnish excluding any such wastes specified on list B (note the related entry on list B B4010);

(l) A4130: Waste packages and containers containing Annex I substances in concentration sufficient to exhibit Annex III hazard characteristic);

(m) A4140: Waste consisting of or containing off specification or outdated chemicals corresponding to Annex I categories and exhibiting Annex III hazard characteristics;

(n) A4160: Spent activated carbon not included on list B (note the related entry on list B B2060).

24. List B of Annex IX lists wastes that "will not be wastes covered by Article 1, paragraph 1 (a), unless they contain Annex I material to an extent causing them to exhibit an Annex III characteristic". List B of Annex IX includes a number of wastes or waste categories that have the potential to contain or be contaminated with UV-328, including:

(a) B1250: Waste end-of-life motor vehicles, containing neither liquids nor other hazardous components;

(b) B3011: Plastic waste (note the related entries Y48 in Annex II and on list A3210);[11]

(c) B3020: Paper, paperboard and paper product wastes;[12]

(d) B3026: The following waste from the pre-treatment of composite packaging for liquids, not containing Annex I materials in concentrations sufficient to exhibit Annex III characteristics:

(i) Non-separable plastic fraction;

(ii) Non-separable plastic-aluminium fraction;

(e) B3027: Self-adhesive label laminate waste containing raw materials used in label material production;

(f) B3030: Textile waste;[13]

(g) B3035: Waste textile floor coverings, carpets;

(h) B3040: Rubber wastes;[14]

(i) B3080: Waste parings and scrap of rubber;

(j) B3090: Paring and other wastes of leather or of composition leather not suitable for the

[11] Refer to Annex IX of the Basel Convention for a full description of this entry.

[12] Refer to Annex IX of the Basel Convention for a full description of this entry.

[13] Refer to Annex IX of the Basel Convention for a full description of this entry.

[14] Refer to Annex IX of the Basel Convention for a full description of this entry.

manufacture of leather articles, excluding leather sludges, not containing hexavalent chromium compounds and biocides (note the related entry on list A A3100);

(k) B3100: Leather dust, ash, sludges or flours not containing hexavalent chromium compounds or biocides (note the related entry on list A A3090);

(l) B4010: Wastes consisting mainly of water-based/latex paints, inks and hardened varnishes not containing organic solvents, heavy metals or biocides to an extent to render them hazardous (note the related entry on list A A4070);

(m) B4020: Wastes from production, formulation and use of resins, latex, plasticizers, glues/adhesives.[15]

25. For further information, see section II.A of the General technical guidelines.

B. Stockholm Convention

26. The present guidelines cover intentionally produced UV-328, whose production and use are to be eliminated in accordance with Article 3 and part I of Annex A to the Stockholm Convention. According to decision SC-11/11, UV-328 is listed in Annex A as follows:

Chemical	*Activity*	*Specific exemption*
UV-328 CAS No. 25973-55-1	Production	As allowed for the Parties listed in the Register in accordance with the provisions of part XII of this Annex
	Use	In accordance with part XII of this Annex: Parts of motor vehicles (covering all land-based vehicles, such as cars, motorcycles, agricultural and construction vehicles and industrial trucks), such as bumper systems, radiator grills, spoilers, car garnish, roof modules, soft/hard tops, trunk lids and rear window wipers Industrial coating applications for motor vehicles, engineering machines, rail transportation vehicles, and heavy-duty coatings for large steel structures Mechanical separators in blood collection tubes Triacetyl cellulose (TAC) film in polarizers Photographic paper Replacement parts for articles in applications in accordance with the provisions of paragraphs 2 and 3 of part XII of this Annex

27. Annex A, part XII ("UV-328") to the Stockholm Convention outlines specific requirements for production and use of UV-328 as follows:

> 1. "The production and use of UV-328 shall be eliminated except for Parties that have notified the Secretariat of their intention to produce and/or use it in accordance with Article 4.
>
> 2. Specific exemptions for the production and use of UV-328 for replacement parts for articles shall apply where UV-328 was originally used in the manufacture of those articles and may be available, limited to the following applications, until the end of the service life of the articles or 2044, whichever comes earlier:
>
> (a) Motor vehicles (covering all land-based vehicles, such as cars, motorcycles, agricultural and construction vehicles and industrial trucks);
>
> (b) Stationary industrial machines (such as tower cranes, concrete plants and hydraulic crushers) for use in agriculture, forestry and construction;
>
> (c) Liquid crystal displays in instruments for analysis, measurements, control, monitoring, testing, production and inspection (such as recorders, infrared radiation thermometers, digital storage oscilloscopes and radiographic testing instruments) other than for medical applications.

[15] Refer to Annex IX of the Basel Convention for a full description of this entry.

3. Specific exemptions for the use of UV-328 for replacement parts for articles for the following applications for medical purposes shall apply where UV-328 was originally used in the manufacture of those articles and may be available until the end of the service life of those articles, subject to review by the Conference of the Parties no later than 2041:

(a) Liquid crystal displays in medical and in-vitro diagnostic devices (such as ultrasound diagnostic devices, flexible endoscopes, immunoassay analysers, clinical chemistry analysers and blood coagulation analysers);

(b) Liquid crystal displays in instruments for analysis, measurements, control, monitoring, testing, production and inspection (such as recorders, infrared radiation thermometers, digital storage oscilloscopes and radiographic testing instruments).”

28. Further information on the register of specific exemptions for UV-328 is available from the website of the Stockholm Convention (www.pops.int).

29. For further information, see section II.B of the General technical guidelines.

III. Issues under the Stockholm Convention to be addressed cooperatively with the Basel Convention

A. Low POP content

30. The provisional definition of low POP content for UV-328 is [XX] mg/kg.

31. The low POP content described in the Stockholm Convention is independent from the provisions on hazardous waste under the Basel Convention.

32. Wastes with a content of UV-328 at or above [XX] mg/kg must be disposed of in such a way that the POP content is destroyed or irreversibly transformed in accordance with the methods described in subsection IV.G.2 of the General technical guidelines. Otherwise, they may be disposed of in an environmentally sound manner when destruction or irreversible transformation does not represent the environmentally preferable option in accordance with the methods described in subsection IV.G.3 of the General technical guidelines.

33. Wastes with a content of UV-328 below [XX] mg/kg should be disposed of in accordance with the methods referred to in subsection IV.G.4 of the General technical guidelines (outlining disposal methods when POP content is low), taking into account section IV.I.1 below (pertinent to higher-risk situations).

34. For further information on low POP content, refer to section III.A of the General technical guidelines.

B. Levels of destruction and irreversible transformation

35. For the provisional definition of levels of destruction and irreversible transformation, see section III.B of the General technical guidelines.

C. Methods that constitute environmentally sound disposal

36. See section IV.G below and section IV.G of the General technical guidelines.

IV. Guidance on environmentally sound management (ESM)

A. General considerations

37. For further information, see section IV.A of the General technical guidelines.

B. Legislative and regulatory framework

38. Parties to the Basel and Stockholm Conventions should examine their national strategies, policies, controls, standards and procedures to ensure that they are in agreement with the two conventions and their obligations under them, including those that pertain to ESM of UV-328 wastes.

39. Elements of a regulatory framework applicable to UV-328 should include measures to prevent the generation of wastes and to ensure the ESM of generated wastes. Such elements could include:

(a) Environmental protection legislation establishing a regulatory regime, setting release limits and establishing environmental quality criteria;

(b) Prohibitions on the production, sale, use, import and export of UV-328, except in the case of Parties that have notified the Secretariat of their intention to use or produce UV-328 in accordance with the time-limited specific exemption listed in Annex A to the Stockholm Convention;

(c) A requirement that best available technologies (BAT) and best environmental practices (BEP) be employed in the production and use of UV-328, in cases where Parties have notified the Secretariat of their intention to use or produce UV-328 in accordance with the time-limited exemption listed in Annex A to the Stockholm Convention;

(d) Measures to ensure that UV-328 wastes cannot be disposed of in ways that may lead to recovery, recycling, reclamation, direct reuse or alternative uses other than those exempted in Annex A to the Stockholm Convention;

(e) Adequate ESM controls to separate materials containing UV-328 from materials that can be recycled (e.g., plastics, oils, rubber, construction materials);

(f) Transportation requirements for hazardous materials and waste;

(g) Specifications for containers, equipment, bulk containers and storage sites for obsolete unused UV-328;

(h) Specification of acceptable analytical and sampling methods for UV-328;

(i) Requirements for waste management and disposal facilities;

(j) Definitions of hazardous waste and conditions and criteria for the identification and classification of UV-328 wastes as hazardous wastes;

(k) A general requirement for public notification and review of proposed government waste-related regulations, policies, certificates of approval, licences, inventory information and national releases and emissions data;

(l) Requirements for identification, assessment and remediation of contaminated sites;

(m) Requirements concerning the health and safety of workers;

(n) Legislative measures on, e.g., waste prevention and minimization, inventory development and emergency response.

40. For further information, see section IV.B of the General technical guidelines.

C. Waste prevention and minimization

41. Both the Basel and Stockholm conventions advocate waste prevention and minimization. The production and use of UV-328 is to be eliminated under the Stockholm Convention, unless they fall under the exemptions listed in part I of Annex A to the Convention.

42. Quantities of waste containing UV-328 should be minimized through isolation and separation of those wastes from other wastes at source in order to prevent their mixing with, and contamination of, other waste streams.

43. The mixing and blending of wastes with UV-328 content at or above the established low POP content value with other materials solely for the purpose of generating a mixture with a UV-328 content below established low POP content value, are not environmentally sound. Nevertheless, the mixing or blending of materials as a pre-treatment method may be necessary in order to enable treatment or to optimize treatment efficiency. Any blending of waste or mixing of material should use the minimum amount of other waste or material needed to enable or optimise treatment. Any reduction of concentration below the low POP content due to blending or mixing does not remove the requirement to destroy or irreversibly transform the POPs.

44. For further information, see section IV.C on waste prevention and minimization of the General technical guidelines.

D. Identification of wastes

45. Article 6, paragraph 1 (a), of the Stockholm Convention requires each party to, *inter alia*, develop appropriate strategies for the identification of products and articles in use and wastes

consisting of, containing or contaminated with POPs. The identification of wastes containing UV-328 is the starting point for their effective ESM.

46. For general information on identification and inventories, see section IV.D of the General technical guidelines.

1. Identification

47. UV-328 wastes can be found:

(a) In residues from UV-328 production and at sites where such chemicals were produced, formulated and stored;

(b) In storage facilities and at sites where UV-328 was used or applied, e.g., at polymer compounding and coatings production facilities, plastic articles production sites, construction material production, construction sites, paint, fabric, textile and leather production, automotive finishes production and production sites, automotive parts (e.g., bumper system, radiator grilles, spoiler system, etc., including replacement parts) production and assembly sites;

(c) In contaminated materials, including protective clothing, application equipment and accessories, empty packaging materials, containers, floors, walls and windows;

(d) In facilities for the collection, recycling and waste management of plastics, end-of-life vehicles, textiles, rubber, construction materials, etc;

(e) In soils, sediments and sewage sludges and in water that has been contaminated by, for example, releases from industrial uses of UV-328;

(f) In retail of products containing UV-328, such as products and articles made of plastic (packaging, toys, fabric) footwear, coatings, paints, sealants and adhesives, construction materials;

(g) At dumpsites and in landfills.

48. It should be noted that even experienced technical personnel may not be able to determine the nature of an effluent, substance, container or piece of equipment by its appearance or markings. Consequently, Parties may find the information on production, use and types of waste provided in section I.B of the present guidelines useful in identifying articles and mixtures containing UV-328.

2. Inventories

49. A national inventory should, as appropriate, include data on:

(a) Production of UV-328 within a country;

(b) Import and export of products and articles consisting of or containing UV-328;

(c) Disposal of UV-328 wastes;

(d) Import and export of UV-328 wastes.

50. When developing inventories on UV-328 wastes, it is important to consider the service lives of articles where they have been used and the timing of their placement on the market in relation to restrictions.

51. Inventories are an important tool for identifying, quantifying and characterizing wastes. A step-by-step approach for the development of national inventories of UV-328 generally includes the following steps:

(a) Step 1: planning (i.e., identification of relevant sectors that use or produce UV-328);

(b) Step 2: choosing data-collection methodologies using a tiered approach;

(c) Step 3: collecting and compiling data from national statistics on the production, use, import and export of UV-328;

(d) Step 4: managing and evaluating the data obtained in step 3 using an estimation method;

(e) Step 5: preparing an inventory report;

(f) Step 6: periodically updating the inventory report.

52. The main uses of UV-328 might differ from region to region as well as their timing.

53. UV-328 is identified as a high volume production substance with a major use as an additive in plastics as well as in coatings, paints, printing inks and textiles as light or UV stabilizer. Considering the variety of applications of UV-328, it would be difficult to estimate the volumes of UV-328 wastes[16].

E. Sampling, analysis and monitoring

54. For general information on sampling, analysis and monitoring, see section IV.E of the General technical guidelines.

1. Sampling

55. Sampling serves as an important element for identifying and monitoring environmental concerns and human health risks.

56. Standard sampling procedures should be established and agreed upon before the start of the sampling campaign. Sampling should comply with specific national legislation or guidelines, where it exists, or with international protocols and standards.

57. Types of matrices that are typically sampled for include:

(a) Liquids:

(i) UV-328 formulations;

(ii) Oil- and water-based liquids: hydraulic liquids, motor oils, brake fluids, cooling liquids in refrigerators;

(iii) Leachates from landfills, influent and effluent of WWTPs, surface and storm water;

(iv) Biological fluids (blood, maternal milk);

(b) Solids:

(i) Wastes from production processes of polyolefins (LDPE, HDPE, PP, etc.) and other types of thermoplastic or thermosetting polymers (e.g., PS, ABS, PUR, PVC);

(ii) Materials where UV-328 have been used: e.g., plastic products and food packaging (including plastic litter), rubber, resins, cosmetics, coatings, paints, printing inks, construction products, outdoor furniture, textiles, automotive articles and spare parts;

(iii) Shredding materials and residues;

(iv) Solids from treatment or disposal processes (fly ash, bottom ash, sludge, still bottoms, other residues, clothing, etc.);

(v) Soil, sediment, rubble, sewage sludge and compost;

(vi) Biological tissue samples;

(vii) Recyclates;

(c) Gases:

(i) Air (indoor and outdoor).

2. Analysis

58. Analysis refers to the extraction, purification, separation, identification, quantification and reporting of UV-328 in the matrix of interest. In order to obtain meaningful and acceptable results, analytical laboratories should have the necessary infrastructure (housing) and proven experience.

[16] There is work ongoing under the POPRC for considering options for identifying persistent organic pollutants in stockpiles, products and articles in use and in wastes, according to Decision SC-11/12 of the Conference of the Parties to the Stockholm Convention on Persistent Organic Pollutants. The work could be consulted in: https://chm.pops.int/TheConvention/POPsReviewCommittee/Meetings/POPRC19/POPRC19Followup/tabid/9694/Default.aspx.

59. The development and dissemination of reliable analytical methods and the accumulation of high-quality analytical data are important to understand the environmental impact of hazardous chemicals, including POPs. In addition, they are needed to determine whether the waste is classified hazardous.

60. Main methods for analysis of benzotriazoles like UV-328 in environmental matrices have been by gas chromatography-mass spectrometry (GC-MS), gas chromatography-tandem mass spectrometry (GC-MS/MS), ultra-high performance liquid chromatography-mass spectrometry/mass spectrometry (UHPLC-MS/MS) and liquid chromatography-tandem mass spectrometry (LC-MS/MS) (Montesdeoca-Esponda et al., 2013).

61. An International Standards Organization (ISO) method ISO 24040:2022 is available for textiles: Textiles – Determination of certain benzotriazole compounds. It addresses the standardized analyses of certain benzotriazole compounds (UV-320, UV-327, UV-328, UV-350) using liquid chromatography-tandem mass spectrometry (LC-MS/MS), liquid chromatography-diode array detector (LC-DAD) or gas chromatography with mass spectrometry (GC-MS) for textile materials (fibres and fabrics). Also, high performance liquid chromatography (HPLC) or high performance liquid chromatography-tandem mass spectrometry (HPLC/MS-MS) have been reported for the analysis of benzotriazoles in textiles (Wang et al., 2017). A simultaneous determination method for UV absorbers in textiles by using ultra-high performance liquid chromatography/orbitrap high resolution mass spectrometry (UPLC/Orbitrap HRMS) has also been developed (Wang et al., 2017) with a limit of detection (LOD) value of 0.3 µg/kg for UV-328.

62. UHPLC-MS/MS have been used to determine UV-328 in plastic pellets and biodegradable plastic products (Karlsson et al., 2022; Yao et al., 2023). Yao et al. (2023) developed a method to determine 13 ultraviolet absorbents in six different types of biodegradable plastic samples (plastic bags, garbage bags, food packaging bags, plastic lunch boxes and tableware, product packing bags and mulch films) with LODs in the range of 0.02-2 µg/kg.

63. Different extraction and analytical methods for benzotriazole ultraviolet stabilizers, including UV-328, have been reviewed more recently by Zhou et al. (2023).

64. Shimadzu Corporation (2023) investigated a possibility to analyze UV-328 and Dechlorane Plus with gas chromatography-mass spectrometry using a pyrolyzer/thermal desorption accessory (Py-TD-GC-MS), which is described in the International Electrotechnical Commission (IEC) standard IEC 62321-8:2017 developed to determine phthalates in polymers. They found that the Py/TD-GC-MS method is sensitive enough and offers sufficient quantitative accuracy to determine whether the additives are present in samples or not. Py/TD-GC-MS can analyze plastic samples directly without solvent extraction and could provide a rapid and simple method of screening for UV-328 and Dechlorane Plus in plastics.

65. UV-328 does not contain easily detectable or separable atoms such as halogens, phosphorous or sulfur (UNEP, 2022b) which means that known hand-held screening instruments, e.g. X-ray fluorescence (UNEP [2025]) could not be used for rapid identification of UV-328 containing waste. No such method has currently been identified for UV-328.

3. Monitoring

66. Monitoring and surveillance serve as means for identifying and tracking environmental concerns and human health risks. Information collected from monitoring programmes feeds into science-based decision-making processes and is used for the evaluation of the effectiveness of risk management measures, including regulations.

67. Monitoring programmes should be implemented in facilities producing and/or using UV-328 as well as facilities managing wastes containing UV-328.

F. Handling, collection, packaging, labelling, transportation and storage

68. For general information on handling, collection, packaging, labelling, transportation and storage, see section IV.F of the General technical guidelines.

69. In cases where UV-328 wastes are considered hazardous wastes, they should be handled, collected, packaged, labelled, transported and stored as such in accordance with applicable provisions of national legislation. Individuals involved in the handling, collection, packaging, labelling, transportation and storage of hazardous waste should receive proper training.

70. In cases where waste containing UV-328 was a constituent of a product or article (e.g., paint, textiles, leather, plastic item), specific handling, collection, packaging, labelling, transportation and

storage considerations may not be required; such waste should be handled, collected, packaged, labelled, transported and stored in accordance with the environmentally sound management provisions of national legislation for that type of waste.

1. Handling

71. The main concerns when handling UV-328 wastes are human exposure, accidental releases to the environment and contamination of other waste streams with UV-328. UV-328 wastes should be handled separately from other waste types in order to prevent contamination of other waste streams.

72. When conducting repairs in or renovation or demolition of buildings, renovators and contractors should pay attention to the possibility of UV-328 being contained in coatings, paints, sealants, flooring, roof modules and textiles. Should these materials contain UV-328, they should be carefully removed and isolated to prevent dust from spreading to surrounding areas. The work should be conducted wearing appropriate protective equipment such as suitable gloves, disposable coveralls, protective goggles and respiratory protection masks that meet international standards.

73. Organizations handling waste containing UV-328 should have in place a set of procedures for handling such wastes and workers should be trained on a regular basis in such procedures. These procedures and training should be reviewed and updated on a regular basis.

2. Collection

74. Collection arrangements that include depots for UV-328 wastes should provide for the separation of UV-328 wastes from other wastes. In case the country has existing arrangement for separate collection of plastics (e.g., extended producer responsibility take-back or deposit-and-return systems for packaging (UNEP, 2023)) or textiles, these may also receive UV-328 wastes. Some of UV-328 wastes, however, may be difficult to identify as containing UV-328.

75. Collections depots should not become long-term storage facilities for UV-328 wastes.

3. Packaging

76. In cases where UV-328 wastes are considered hazardous wastes they should be properly packaged in accordance with the applicable provisions of national legislation. For further information on plastic waste packaging, see also Technical guidelines on the environmentally sound management of plastic waste (UNEP, 2023).

77. UV-328 wastes should be placed into leak-proof, sealed drums, where appropriate.

4. Labelling

78. For information, see subsection IV.F.4 of the General technical guidelines.

5. Transportation

79. In cases where UV-328 wastes are considered hazardous wastes, they should be transported in accordance with applicable provisions of national legislation and approved guidelines.

6. Storage

80. UV-328 wastes should be stored in designated sites and appropriate measures should be taken to prevent the scattering, release and underground seepage of UV-328, and to control the spread of odors.

81. Appropriate measures, such as the installation of partitions, should be taken to avoid contamination of other materials and wastes with UV-328.

82. Storage areas for UV-328 wastes should have adequate access roads for vehicles.

83. UV-328 wastes in storage should be protected from fire.

G. Environmentally sound disposal

1. Pre-treatment

84. For information, see subsection IV.G.1 of the General technical guidelines.

2. Destruction and irreversible transformation methods

85. For information, see subsection IV.G.2 of the General technical guidelines.

3. Other disposal methods when destruction or irreversible transformation is not the environmentally preferable option

86. For information, see subsection IV.G.3 of the General technical guidelines.

4. Other disposal methods when the POP content is low

87. For information, see subsection IV.G.4 of the General technical guidelines.

H. Remediation of contaminated sites

88. Soil contamination can take place over a long period of operation by accumulation and also from spills events. Application of sewage sludge to soil or irrigation by wastewater may be a source of UV-328 loadings to soil (Lai et al., 2014a, 2014b; UNEP, 2022a).

89. For further information, see section IV.H of the General technical guidelines.

I. Health and safety

90. For information, see section IV.I of the General technical guidelines.

1. Higher-risk situations

91. For general information, see subsection IV.I.1 of the General technical guidelines.

92. Higher-risk situations occur at sites where high concentrations or high volumes of UV-328 wastes are found and a high potential for exposure of workers or the general population exists. Direct dermal exposure to and inhalation of fine dust or particles of UV-328 or containing UV-328 in the workplace or home are of particular concern. UV-328 technical and safety data sheets (Hunan Chemical BV, 2016; ECHEMI, 2019) recommend avoiding dust formation and continuous or repetitive breathing of dust. Sites must be well ventilated.

2. Lower-risk situations

93. For information on lower-risk situations, see subsection IV.I.2 of the General technical guidelines.

J. Emergency response

94. Emergency response plans should be in place at sites where UV-328 is produced (where allowed), used, stored, transported or disposed of.

95. Further information on emergency response plans is given in section IV.J of the General technical guidelines.

K. Public participation

96. Parties to the Basel or Stockholm Convention should have open public participation processes.

97. For further information, see section IV.K of the General technical guidelines.

Annex I to the technical guidelines

Synonyms and trade names of commercial formulations that contain or may have contained UV-328 addressed by Stockholm Convention on POPs

Synonyms for UV-328:
2-(2*H*-Benzotriazol-2-yl)-4,6-di-*tert*-pentylphenol (BDTP);
2-(2′-Hydroxy-3′,5′-di-t-amylphenyl) benzotriazole

The synonyms are general in nature.

Tradenames for UV-328
BLS 1328, Chiguard 328, Chisorb 328, Cyasorb UV 2337, Eversorb 74, Everstab 328, GSTAB 328, Hostavin 3310 P, HRsorb-328, Kemisorb 74, Lowilite 28, Milestab 328, Omnistab 328, Riasorb UV-328, Seesorb 704, Songsorb 3280, Sumisorb 350, Thasorb UV328, Tin 328, Ting Nafen 328, Tinuvin 328, UV 2337, UV 74, Uvinul 3028, Viosorb 591.

Annex II to the technical guidelines

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