Supplementary Material

A review of properties, occurrence, fate, and transportation mechanisms of contaminants of emerging concern (CECs) in sewage sludge, biosolids, and soils: recent advances and future trends

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1 Supplementary Data

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Table S1: Occurrence of pharmaceutical products (PPs) in sewage sludge and biosolids

Contaminants	Sewage sludge			Biosolids			References
	Min-Max (ng/g)	Median (ng/g)	Mean ± STD (ng/g)	Min-Max (ng/g)	Median (ng/g)	Mean ± STD (ng/g)	(Author, publication year)
Σ_{12} analgesics (nonnarcotic and narcotic analgesics, antipyretics, NSAIDs, stimulants, and metabolites	2,768-15,474	2,909	4989±4580	2,943-16,426	147	319±346	Silva et al. (2021); Mercl et al. (2021); Riva et al. (2021) ; Moško et al. (2021) ; Kumirska et al. (2019) ; Guironnet et al. (2022a) ; Guironnet et al. (2022b); Camotti Bastos et al. (2020) ; Malvar et al. (2020a) ; Malvar et al. (2020b) ; Gewurtz et al. (2022) ; Castro et al. (2018) ; Svahn and Björklund (2019) ; Gros et al. (2020) ; Pérez-Lemus et al. (2020) ; Rashid et al. (2020) ; Magee et al. (2018) ; Costa Junior et al. (2020) ; Li et al. (2021) ; Abril et al. (2018) ; Abril et al. (2020).
Σ_{23} antibiotics (sulfonamides and potentiators, quinolones and fluoroquinolones, β-lactams, macrolides, tetracyclines, etc.)	4,360-13,663	5,787	7,689± 4,442	1,397-2,298	1,807	1,824±596	
Σ_{6} anticonvulsants and antiepileptics	85.0-352.5	108.7	153± 84	34-322	123	146±136	
Σ_{23} antidepressants, antipsychotics, and antianxiety (benzodiazepines, SSRI, and TCA, etc.)	368.0-5,913	2,191	2,607± 2,391	98-2,662	496	1,073±1,415	
Σ_{25} cardiac care medications (antiarrhythmics, antiplatelet, antihypertensives, β-blockers, diuretics, and calcium channel blockers)	385-5,188	1,350	1,723±1,455	535-8,173	1,961	3,501±3,885	
Σ_{4} antifungals (morpholine, azoles, imidazoles)	186.4-3,009	1,598	1,597±1,996	6,882-10,384	8,633	8,633±2,477	
Σ_{9} lipid regulators (statins, fibrates)	74-93	82.40	83± 12	2-3,175	102	622±1,142	
Σ_{3} antihistamines	94-99	96.45	96± 4	1-5	3	3±3	
Σ_{7} other PPs	10-11	10.55	10± 1	27-512	163	203±203	
Σ_{112} PPs positively (>LOD) detected	**8,330-43,803**	**14,133**	**18,874± 14,965**	**11,918-43,960**	**13,437**	**16,324± 10,231**	

Table S2: Occurrence of personal care products (PCPs) in sewage sludge and soil

Matrix	Sewage sludge			Soils			References
Contaminants	**Min-Max (ng/g)**	**Median (ng/g)**	**Mean ± STD (ng/g)**	**Min-Max (ng/g)**	**Median (ng/g)**	**Mean ± STD (ng/g)**	**(Author, publication year)**
Methyl paraben (MeP)	5-630	47	107±192	<LOD-4.50	2.42	2.21± 1.27	Moško et al. (2021) ; Malvar et al. (2020a) ; Malvar et al. (2020b) ; Zhu et al. (2019) ; Ma et al. (2018) ; Abril et al. (2018) ; Pérez-Lemus et al. (2020) ; Li et al. (2021) ; (Chen et al., 2019)
Ethyl paraben (EtP)	0-170	10	34±58	<LOD-0.22	0.04	0.05± 0.10	
Propyl paraben (PrP)	4-216	9	34±57	<LOD-1.34	0.53	0.49± 0.48	
Isopropyl paraben (iso-PrP)	90-172	131	131 ±58	<LOD-0.36	0.07	0.10± 0.16	
Butyl paraben (BuP)	0-12	8	8±3	<LOD-0.02	0.01	0.01± 0.01	
Isobutyl-paraben (iso-BuP)	<LOD [1]	n.a.[2]	n.a.	<LOD-0.05	<LOQ	0.01± 0.03	
Heptyl paraben (HepP)	5-5	5	5	<LOD-0.88	<LOQ	0.02± 0.61	
Benzyl paraben (BzP)	1-12	5	6±4	<LOD-0.07	<LOQ	0.00±0.04	
Methyl protocatechuate (OH-MeP)	9-139	13	54±74	<LOQ	<LOQ	<LOQ	
3,4-dihydroxybenzoic acid (3,4-DHB)	33-54	86	124±115	<LOD	<LOD	<LOD	
4-hydroxybenzoic acid (4-HB)	98-1,150	100	449±607	8.10-45.0	36.00	29.70±19.24	
Ethyl protocatechuate (OH-EtP)	2.2-2.2	2	2± 0	n.m.[3]	n.m.	n.m.	
Triclosan / Irgasan (TCS)	25-6,165	1165	1748±1,889	<LOQ	n.a.	n.a.	
Triclocarban (TCC)	1- 43,300	1710	8,046±13,913	<LOQ	n.a.	n.a.	
2′-hydroxy-triclocarban (2-OH-TCC)	21- 2,340	180	644± 966	n.m.	n.m.	n.m.	
3′-hydroxy-triclocarban (3-OH-TCC)	1-1,250	74	320± 528	n.m.	n.m.	n.m.	
Carbanilide (CBN)	3-1,340	91	384 ±560	n.m.	n.m.	n.m.	
Monocarbanilide (MCC)	13-120	32	48± 42	n.m.	n.m.	n.m.	
Dichlorocarbanilide (DCC)	40-23,890	520	5,609±10,368	n.m.	n.m.	n.m.	
3,3′,4,4′-tetrachlorocarbanilide (TCCC)	2-580	102	193±222	n.m.	n.m.	n.m.	
Σ_{20} PCPs	**380-81,747**	**4,291**	**17,948± 29,657**	**8.10-52.43**	**39.07**	**32.58± 21.94**	

[1] <LOD: below the detection limit.
[2] n.a.: not applicable.
[3] n.m.: not measured (not analyzed)

Table S3: Occurrence of hormones in sewage sludge and biosolids

Matrix	Sewage sludge			Biosolids			References
Contaminants	**Min-Max (ng/g)**	**Median (ng/g)**	**Mean ± STD (ng/g)**	**Min-Max (ng/g)**	**Median (ng/g)**	**Mean ± STD (ng/g)**	**(Author, publ. year)**
Androstenedione (A4)	n.m.	n.m.	n.m.	2.9-312.0	20.5	72.2±120.2	Silva et al. (2021); Riva et al. (2021); Moško et al. (2021); Kumirska et al. (2019); Gewurtz et al. (2022); Svahn and Björklund (2019).
Androsterone (AN)	n.m.	n.m.	n.m.	33.0-97.0	54.0	55.5±23.6	
Cortisone (E)	<LOD	n.a.	n.a.	n.m.	n.m.	n.m.	
Estrone (E1)	7.9-25.1	17.0	16.7±8.5	2.9-297.0	4.0	70.5±119.1	
17 β-estradiol (E2)	14.3-29.0	16.2	19.8±8.0	3.4-12.0	6.9	6.9±3.2	
17 α-estradiol (17 α-E2)	n.m.	n.m.	n.m.	3.2-11.0	4.0	5.7±3.2	
Estriol (E3)	<LOD	n.a.	n.a.	13.0-690.0	95.0	191.5±255.7	
Progesterone (P)	n.m.	n.m.	n.m.	3.0-6,110.0	28.5	1,113.5±2,455.6	
Testosterone (T)	2.9-6.4	3.5	4.1±1.6	0.8-88.0	5.7	20.9±33.7	
Equilin (EQL)	n.m.	n.m.	n.m.	6.4-25.0	8.0	11.6±7.4	
Equilenin (EQN)	n.m.	n.m.	n.m.	0.6-4.6	0.8	1.6±1.6	
17 α-Ethinylestradiol (EE2)	<LOD	n.a.	n.a.	4.0-40.0	5.8	13.4±14.4	
Altrenogest (ALT)	n.m.	n.m.	n.m.	0.5-1.8	0.8	0.9±0.5	
Desogestrel (DSG)	n.m.	n.m.	n.m.	65.0-1,050.0	252.0	455.7±523.1	
Diethylstilbestrol (DES)	<LOD	n.a.	n.a.	n.m.	n.m.	n.m.	
Gestodene (GST)	25.0-56.3	40.6	40.6±22.1	n.m.	n.m.	n.m.	
Melengestrol acetate (MGA)	n.m.	n.m.	n.m.	0.74-7.60	1.10	2.4±2.7	
Mestranol (EEME)	n.m.	n.m.	n.m.	20.00-9,010.00	175.5	1,732.1±3,582.9	
Norethindrone (NRT)	n.m.	n.m.	n.m.	3.30-8.20	6.4	6.0±2.0	
Norgestrel (NRG)	n.m.	n.m.	n.m.	3.30-22.00	6.5	8.6±6.9	
17 α-dihydro Equilin (2H-EQL)	n.m.	n.m.	n.m.	3.40-28.00	5.6	9.7±9.5	
Σ_{19} HORMONES	**50.1-116.8**	**77.3**	**81.3±40.3**	**169.4- 17,814.2**	**681.2**	**3,778.8± 7,165.6**	

Table S4: Occurrence of bisphenols in sewage sludge and soils

Matrix	Sewage sludge			Soils			References
Contaminants	**Min-Max (ng/g)**	**Median (ng/g)**	**Mean ± STD (ng/g)**	**Min-Max (ng/g)**	**Median (ng/g)**	**Mean ± STD (ng/g)**	**(Author, publ. year)**
Bisphenol A (BPA)	3.6-1,699.0	178.9	353.5±404.8	0.2-166.0	2.3	21.6±36.3	(Xu et al., 2021); (Peng et al., 2020); (Huang et al., 2020); (Sun et al., 2018); (Sánchez-Piñero et al., 2020); (Zhu et al., 2019); (Abril et al., 2018); (Pérez-Lemus et al., 2020); (Moško et al., 2021)
Bisphenol AF (BPAF)	0.2-223.9	5.3	32.6±58.4	0.2-0.2	0.2	0.2±0.0	
Bisphenol AP (BPAP)	n.m.	n.m.	n.m.	0.3-2.6	0.3	0.5±0.5	
Bisphenol B (BPB)	0.5-82.1	30.0	35.6±38.9	0.3-0.5	0.4	0.4±0.1	
Bisphenol BP (BPBP)	n.m.	n.m.	n.m.	0.3-0.5	0.4	0.4±0.1	
Bisphenol C (BPC)	0.1-0.5	0.3	0.3±0.1	n.m.	n.m.	n.m.	
Bisphenol CI (BPCI)	<LOD	n.a.	n.a.	n.m.	n.m.	n.m.	
Bisphenol E (BPE)	0.5-3.2	0.9	1.2±0.9	<LOD	n.a.	n.a.	
Bisphenol F (BPF)	7.5-1,058.0	165.0	199.3±242.0	1.3-212.9	3.4	33.5±73.5	
Bisphenol FL (BPFL)	n.m.	n.m.	n.m.	0.4-0.5	0.5	0.5±0.0	
Bisphenol G (BPG)	0.4-0.5	0.4	0.4±0.1	n.m.	n.m.	n.m.	
Bisphenol M (BPM)	<LOD	n.a.	n.a.	n.m.	n.m.	n.m.	
Bisphenol P (BPP)	0.5-0.5	0.4	0.4±0.0	0.3-78.2	1.0	10.1±24.2	
Bisphenol PH (BPPH)	1.0-3.5	2.4	2.4±0.8	0.6	0.7	0.7±0.1	
Bisphenol S (BPS)	0.3-88.6	1.3	12.1±26.2	0.2-0.6	0.3	0.3±0.1	
Bisphenol TMC (BP-TMC)	0.1	0.2	1.3±2.4	n.m.	n.m.	n.m.	
Bisphenol Z (BPZ)	<LOD	n.a.	n.a.	0.00	n.a.	n.a.	
Tetrabromobisphenol A (TBBPA)	0.9-10.0	2.77	4.6±4.8	n.m.	n.m.	n.m.	
Tetrachlorobisphenol A (TCBPA)	<LOD	n.a.	n.a.	n.m.	n.m.	n.m.	
Tetrabromobisphenol S (TBBPS)	<LOD	n.a.	n.a.	n.m.	n.m.	n.m.	
Σ_{20} BISPHENOLS	**15.0-3,174.3**	**387.0**	**642.5±779.3**	**4.1-462.9**	**9.56**	**68.25±134.95**	

Table S5: Occurrence of phthalates in sewage sludge and soils

Matrix	Sewage sludge			Soils			References
Contaminants	**Min-Max (µg/g)**	**Median (µg/g)**	**Mean ± STD (µg/g)**	**Min-Max (µg/g)**	**Median (µg/g)**	**Mean ± STD (µg/g)**	**(Author, publ. year)**
Dimethyl phthalate (DMP)	0.03-6.10	2.07	2.97±2.51	0.007-3.62	0.13	0.57±1.07	(Wang et al., 2022); (Zhou et al., 2021a); (Brodskiy et al., 2019); (Lee et al., 2019); (Salaudeen et al., 2018); (Wei et al., 2020)
Diethyl phthalate (DEP)	0.07-11.15	3.45	3.68±3.12	0.003-2.43	0.04	0.26±0.57	
Dibutyl phthalate (DBP)	0.44-1,248.58	181.55	386.29±467.28	0.214-1.41	0.29	0.64±0.67	
Diisobutyl phthalate (DiBP)	0.52-0.77	0.67	0.65±	0.023-179.20	0.53	11.42±41.98	
Di(2-ethoxy ethyl) phthalate (DEEP)	n.m.	n.m.	n.m.	0.007-0.39	0.05	0.11±0.14	
Di-n-hexyl phthalate (DHP)	n.m.	n.m.	n.m.	0.001-0.01	<LOD	n.a.	
Butylbenzyl phthalate (BBzP)	0.10-621.81	201.84	228.29±216.95	0.003-0.69	0.02	0.09±0.19	
Di(hexyl-2-ethylhexyl)phthalate (DHEHP)	n.m.	n.m.	n.m.	0.002-0.04	0.01	0.01±0.01	
Di(2-butoxyethyl) phthalate (DBEP)	n.m.	n.m.	n.m.	0.003-0.80	0.03	0.18±0.26	
Bis(2-ethylhexyl) phthalate (DEHP)	39.96-481.27	223.52	217.05±141.71	0.012-444.00	1.73	36.10±105.57	
Di-n-octyl phthalate (DOP)	43.64-214.30	94.92	111.21±52.87	0.004-0.61	0.07	0.14±0.18	
Di-n-nonyl phthalate (DNP)	n.m.	n.m.	n.m.	0.004-0.14	0.01	0.04±0.05	
Diisononyl phthalate (DiNP)	22.00-26.00	22.00	23.33±2.31	n.m.	n.m.	n.m.	
Diisodecyl phthalate (DiDP)	0.71-8.40	4.10	4.40±3.85	n.m.	n.m.	n.m.	
Bis(2-methoxyethyl) phthalate (DMEP)	n.m.	n.m.	n.m.	<LOD -0.82	0.09	0.30±0.45	
Σ_{15} PHTHALATES (µg/g)	**107.46-2,618.38**	**734.10**	**866.66± 890.73**	**0.28-634.15**	**2.99**	**49.88±151.16**	
Σ_{15} PHTHALATES (ng/g)	**107,46 - 2,618,380**	**734,100**	**866,657± 890,730**	**283.00-634,154**	**2,989.60**	**49,875.39± 151,158**	

Table S6: Substituted diphenylamines (S-DPAs) in biosolids

S-DPAs	[4]Min-Max (ng/g)	Median (ng/g)	Mean ± STD (ng/g)	95th percentile (ng/g)	(Author, publication year)
Diphenylamine (DPA)	0.27-153.00	10.49	32.10 ±59.61	119.175	(Zhang et al., 2020b); (Zhang et al., 2021).
Isopropyl diphenylamine (IP-DPA)	0.27-153.00	4.94	27.22 ±53.25	105.675	
Dimethyl-acridan (DM-AD)	0.27-32.00	6.04	10.59 ±12.30	28.425	
Isopropyl-dimethyl-acridine (IPDM-AD)	0.27-17.70	3.75	5.83±6.91	15.5175	
Di isopropyl diphenylamine (DIP-DPA)	0.27-20.00	8.97	9.63±9.11	19.54	
Di isopropyl-dimethyl-acridine (DIPDM-AD)	0.27-17.70	8.97	8.98±8.72	16.827	
Σ_6 PREPODs	***1.64-375.40***	***43.15***	***94.33±149.89***	***305.16***	
Styrenated diphenylamine (S-DPA1)	0.27-176.00	37.69	61.71±73.89	161.5	
Styrenated diphenylamine (S-DPA2)	0.27-169.00	37.79	60.68±71.62	156.25	
Isooctyl-diphenylamine (TO−DPA)	0.27-435.00	86.19	121.98±160.72	355.75	
Isooctyl-styrenated diphenylamine (TOS-DPA1)	0.27-118.00	32.15	42.74±48.40	106.595	
Isooctyl-styrenated diphenylamine (TOS-DPA2)	0.27-118.00	39.34	47.74±51.52	110.5	
Isooctyl-styrenated diphenylamine (TOS-DPA3)	0.27-208.00	52.19	72.08±80.36	185.5	
Diisooctyl-styrenated diphenylamine (DTOS-DPA)	0.27-1269.00	65.69	253.63± 499.41	981.25	
Diisooctyl-diphenylamine (DTO−DPA)	0.27-265.00	57.19	83.34±99.48	228.25	
Σ_8 BNSTs	***2.14-2758.00***	***408.23***	***743.88± 1085.41***	***2285.60***	
Σ_{14} S-DPAs	**3.78-3133.40**	**451.38**	**838.22± 1235.29**	**2590.75**	

[3] The molecular occurrences (Min, Median, Max) from Zhang et al. (2020b) were assumed to be equal for each unique chemical entity under every UVCB group (PREPOD, BNST) and derived from the total Min and Max of each group.

Table S7: Substituted diphenylamines (S-DPAs) in dust

S-DPAs	[5]Min-Max (ng/g)	Median (ng/g)	Mean ± STD (ng/g)	95th percentile (ng/g)	(Author, publication year)
Diphenylamine (DPA)	2.3-129.0	17.1	34.4	104.9	(Liu et al., 2019)
Dicyclohexylamine (DChA)	1.4-70.7	36.1	36.1	67.2	
N-phenyl-1-naphthylamine (AO-A)	4.6-299.0	14.6	88.7	263.2	
N-phenyl-2-naphthylamine (AO-D)	3.3-170.0	15.9	66.2	163.4	
4,4'-di-tert-butyldiphenylamine (di-t-butyl-DPA)	3.2-8,070.0	10.7	1,641.5	6,479.8	
4,4′-di-n-octylphenylamine (di-n-octyl-DPA)	9.0-4,590.0	74.2	1,186.8	3,913.2	
4,4′-bis(1,1-dimethylbenzyl) diphenylamine (diAMS)	3.4-290.0	46.1	119.7	282.8	
Σ_7 OTHER S-DPAs	**27.2-13,618.7**	**214.6**	**3,173.4**	**11,274.6**	

[3] The molecular occurrences (Min, Median, Max) from Zhang et al. (2020b) were assumed to be equal for each unique chemical entity under every UVCB group (PREPOD, BNST) and derived from the total Min and Max of each group.

Table S8: Substituted p-phenylenediamines (S-PPDs) in biosolids

S-PPDs	Min-Max (ng/g)	Median (ng/g)	Mean ± STD (ng/g)	95th percentile (ng/g)	(Author, publication year)
N, N′-diphenyl-p-phenylenediamine (DPPD)	1.6-105.0	14.6	31.6±40.8	91.4	(Zhang et al., 2020b); (Zhang et al., 2021).
N-phenyl-N′-(o-tolyl)-p-phenylenediamine (PTPD)	1.6-158.0	15.7	40.7±60.5	131.1	
N,N′-di(o-tolyl)-p-phenylenediamine (DTPD)	1.6-103.0	14.8	31.3±40.0	89.9	
Σ_3 S-PPDs	**4.8-366.0**	**45.1**	**103.6±141.3**	**312.4**	

Table S9: Substituted p-phenylenediamines (S-PPDs) in indoor and playground dust

S-PPDs	Min-Max (ng/g)	Median (ng/g)	Mean ± STD (ng/g)	95th percentile (ng/g)	(Author, publication year)
N-(1,4-dimethylpentyl)-N′-phenylbenzene-1,4-diamine (77PD)	0.3-2.0	1.1	1.2±1.2	1.92	(Liu et al., 2019); (Cao et al., 2022); (Hiki and Yamamoto, 2022); (Huang et al., 2021); (Klöckner et al., 2021); (Li and Kannan, 2024).
N-isopropyl-N′-phenyl-p-phenylenediamine (IPPD)	0.0-55.0	5.6	15.4±21.5	47.48	
N-phenyl-N′-cyclohexyl-p-phenylenediamine (CPPD)	0.04-65.0	2.0	20.4±27.2	60.56	
N-(1.3-dimethylbutyl)-N′-phenyl-p-phenylenediamine (6PPD)	0.0	17.8	126.4±194.0	499.75	
N,N′-diphenyl-p-phenylenediamine (DPPD)	0.0	5.5	11.5±13.2	33.8	
N-phenyl-N′-(o-tolyl)-p-phenylenediamine (PTPD)	<LOD	<LOD	<LOD	<LOD	
N,N′-di(o-tolyl)-p-phenylenediamine (DTPD)	0.3	2.6	2.6±3.2	4.6	
N,N′-di-2-naphthyl-p-phenylenediamine (DNPD)	0.2	1.0	2.2±2.2	5.0	
N-isopropyl-N′-phenyl-1,4-phenylenediamine-quinone (IPPD-Q)	0.0	1.5	1.5±2.2	2.9	
N-phenylN′-cyclohexyl-p-phenylenediamine-quinone (CPPD-Q)	0.04	1.6	1.6±2.2	3.0	
N-(1,3-dimethylbutyl)-N′-phenyl-p-phenylenediamine-quinone (6PPD-Q)	0.02	32.2	131.2±226.6	485.6	
N,N′-diphenyl-p-phenylenediamine-quinone (DPPD-Q)	0.0	30.1	30.1±42.5	57.2	
N,N′-di(o-tolyl)-p-phenylenediamine-quinone (DTPD-Q)	0.0	4.0	**4.0**±5.6	7.5	
Σ_{13} S-PPDs	**1.2**	**105.1**	**348.0±541.6**	**1209.2**	

Table S10: Physicochemical properties of neonicotinoid insecticides (Lewis, 2006, Tomlin and Council, 2000, Kim et al., 2016)

No	Compounds	pKa	Log K_{ow}	Half-life degradation time (DT_{50})
1)	Acetamiprid	0.7	0.80	1-8 days
2)	Clothianidin	11.6	-0.90	148-1,155 days
3)	Dinotefuran	-0.45	-0.55	3-43 days
4)	Imidacloprid	11	0.57	39-997 days
5)	Nitenpyram	3.1	-0.66	1-15 days
6)	Thiacloprid	10.4	1.24	0.88-55.9 days
7)	Thiamethoxam	2.2	-0.13	7-353 days
8)	Fipronil	4.0	4.0	122-128 days

Table S11: Occurrence of neonicotinoid insecticides in various soil types and uses

CECs	Occurrence in soil			
NEOs	Min-Max (ng/g)	Median (ng/g)	Mean ± STD (ng/g)	References (Author, publication year)
Imidacloprid (IMI)	0.003-162.00	2.64	9.71 ± 25.86	(Svahn and Björklund, 2019); (Zhang et al., 2020a); (Ying et al., 2022); (Zhou et al., 2018); (Zhou et al., 2021b); (Bonmatin et al., 2019); (Bonmatin et al., 2021).
Thiamethoxam (THI)	0.001-38.50	2.20	3.12 ± 4.69	
Clothianidin (CLO)	0.003-21.63	1.51	2.82 ± 3.79	
Acetamiprid (ACE)	0.002-33.40	2.60	3.10 ± 3.69	
Thiacloprid (THA)	0.003-5.73	0.75	1.60 ± 1.92	
Dinotefuran (DIN)	0.050-5.96	0.87	1.78 ± 1.73	
Nitenpyram (NIT)	0.310-5.52	2.51	2.66 ± 1.86	
Imidaclothiz (IMT)	<LOD	<LOD	<LOD	
Σ_8 NEOs	**0.372-272.74**	**13.08**	**24.79 ± 43.55**	

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