Disclaimer

This document is translated & published by **ChemLinked**, a division of REACH24H Consulting Group. **ChemLinked** is a unique portal to essential information & assistance with China's Environmental & Regulatory issues. You may subscribe and download this document from ChemLinked.com.

Nondisclosure:
For ChemLinked Standard Members and e-book buyers: You may not disclose this document to anyone else without the written permission of ChemLinked.
For ChemLinked Corporate Members: You may circulate the copy of this document electronically or by printed copy with your colleagues in the same company which is registered in ChemLinked.com. Besides, you are not allowed to disclose this document to anyone else without the written permission of ChemLinked.

For further clarification and questions, please contact us:
info@chemlinked.com

Annex 1

Minimum toxicological data requirements for regular notification

Minimum Data Requirements	Band 1 1≤Q<10 t/a	Band 2 10≤Q<100 t/a	Band 3 100≤Q<1000 t/a	Band4 Q≥1000 t/a
Acute Toxicity[1]	√[2]	√	√	√
Skin irritation	√	√	√	√
Eye irritation	√	√	√	√
Skin sensitization	√	√	√	√
Mutagenicity[3]	√	√	√	√
28-day repeated dose toxicity[4]	~~√~~	√	√	√
Reproductive/Developmental Toxicity[5]		√	√	√
Toxicokinetics[6]		√	√	√
90-day repeated dose toxicity[7]		~~√~~[6]	√	√
Chronic Toxicity[8]				√
Carcinogenicity[9]				√
Other[10]				
*Q: annual tonnage quantity to be notified				

[1]The acute toxicological data includes the acute toxicity by oral, dermal and inhalation routes~~, skin/eye irritation and skin sensitization~~;

[2]For Band 1: One test data should be submitted according to notified usage. Acute oral toxicity data is preferred. For Band 2 and up: Acute oral toxicity, ~~skin irritation, eye irritation, skin sensitization test shall be submitted. Combined with the physical and chemical characteristics of the substance and the main routes of exposure, the~~ acute dermal toxicity and acute inhalational toxicity test shall be submitted ~~accordingly~~.

[3]For Band 1: A bacterial reverse mutation test ~~and an *in vitro* mammalian chromosome aberration test (or in vitro micronucleus test)~~ shall be submitted*. If any test result is positive, and there is a risk of widespread exposure, the higher level of mutagenicity test of corresponding genetic toxicity endpoint shall be submitted.

*If the notified substance has obvious toxicity to bacteria and it is not appropriate to conduct the bacterial reverse mutation test, *in vitro* mammalian cell gene mutation

data shall be submitted.

For Band 2 to Band 4: An *in vitro* mammalian chromosome aberration test data or an *in vitro* mammalian cell micronucleus test data should be submitted. In the meantime, according to the above test results ~~of Brand 1~~, the test data of one of the following four cases shall be submitted.

a) If all the ~~Brand 1~~ above test results are negative, the *in vitro* mammalian cell gene mutation test data shall be submitted; If the results of mammalian cell gene mutation test *in vitro* are positive, the *in vivo* gene mutation test (e.g. transgenic rodent somatic and germ cell gene mutation assays) or DNA damage and repair test (e.g. unscheduled DNA synthesis test with mammalian liver cells *in vivo*, in vivo comet assay) shall be performed.

b) If the bacterial reverse mutation test is negative and the *in vitro* mammalian chromosome aberration test is positive, the *in vitro* mammalian cell gene mutation test and *in vivo* mammalian chromosome aberration test shall be performed (such as mammalian erythrocyte micronucleus test and mammalian bone marrow chromosome aberration test, etc.). If the *in vitro* mammalian cell gene mutation test is positive, the *in vivo* gene mutation test or DNA damage and repair test shall be performed.

c) If the bacterial reverse mutation test is positive and the *in vitro* mammalian chromosome aberration test is negative, the *in vivo* gene mutation test or DNA damage and repair test shall be performed.

d) If all ~~the Brand 1~~ above test results are positive, one *in vivo* genetic toxicity test data shall be submitted. If the test result is negative, another *in vivo* genetic toxicity test for a different endpoint shall be performed. ~~the *in vivo* gene mutation test and the in vivo mammalian chromosome aberration test shall be submitted.~~

[4]Depending on the identified uses in the notification, the experimental data of at least one exposure route (oral, dermal and inhalation) shall be included in the 28 day repeated dose toxicological testing;

[5]For Band 2: The reproductive/development screening study should be provided. If the substance to be notified has shown adverse impacts on the reproductive system or its chemical analogue has demonstrated reproductive toxicity, a developmental toxicity study should be submitted; if the notified substance has shown adverse developmental impacts or its chemical analogue has demonstrated development toxicity, a reproductive study should be submitted.

~~If the substance to be notified has shown reproductive or developmental toxicity,~~ The screening study may be replaced by a pre-natal developmental toxicity study, two-generation reproductive toxicity study or the extended one generation reproductive toxicity study.

For Band 3 and Band 4: A prenatal developmental toxicity test; and ~~extended one generation reproductive toxicity study or~~ the two-generation reproductive toxicity study or the extended one generation reproductive toxicity study should be provided.

[6]For Band 2 and up: ~~Relative toxicokinetics information should be submitted. Absorption and excretion related information shall be submitted, e.g. testing data, related literature or research data on homologue chemical.~~ A toxicokinetics assessment should be performed according to relative existing data information.

~~For Band 3 and Band 4: A complete toxicokinetics study shall be provided for new chemical substances classified as hazardous new chemical substance according to chemical classifications and health hazard indicators of labeling specification (excluding new chemical substances classified as hazardous only for skin corrosion/irritation, serious eye damage/irritation, respirational or skin sensitization, or aspiration hazards). Otherwise, the requirements are the same as Band 2.~~

[7]Depending on the identified uses in the notification, data from the study of at least one exposure route shall be submitted.

[8]Depending on the identified uses in the notification, data from the study of at least one exposure route should be submitted.

[9]For new substances which are widely used or may be frequent, long-term exposed to the human body, and belong to germ cell mutation 2 category or can induce hyperplasia and / or tumor lesions in repeated dose toxicity study, the carcinogenic test should be submitted.

In addition to the above situation, the carcinogenic test data or assessment report should be submitted. If the mutagenicity assessment conclusion determines carcinogenic data is still required for further evaluation, the carcinogenic test data should be submitted.

“Widely used” refers to chemicals used by trained professional workers in a large number of scattered sites or in the daily life of the general public at random, resulting in uncontrolled exposure or dispersed release. For example, new chemical substances or products containing new chemical substances are used in spray paint, pesticide, textile printing and dyeing or as detergents, cleaning agents, disinfectants, coolants, cosmetics, perfume, air spray products, household paints, coatings, adhesives, lubricants ,etc.

[10]If the literature or other study reports indicate the substance to be notified is toxic to target organs or tissue, the relevant toxicological data should be provided. For instance, in the case of an organic phosphorous substance, the neurotoxicity data should be submitted.

Annex 2

Minimum eco-toxicological data requirements for regular notification

Minimum Data Requirements	Band 1 1≤Q<10 t/a	Band 2 10≤Q<100 t/a	Band 3 100≤Q<1000 t/a	Band4 Q≥1000 t/a
Algae growth inhibition study	√	√	√	√
Acute toxicity testing on *Daphnia magna*	√	√	√	√
Fish, Acute toxicity testing	√	√	√	√
Activated sludge respiration inhibition testing	√	√	√	√
Adsorption/desorption	√	√	√	√
Degradation[1]	√[4]	√[2]	√	√
Earthworm, Acute toxicity testing	√[3]	√[3]	√	√
Daphnia magna reproductive testing		√	√	√
Bioaccumulation		√	√	√
~~Fish, Prolonged toxicity testing (14-day study)~~[4]		~~√~~		
Fish, Chronic toxicity testing[4]			√	√
Seed Germination & Root Elongation Toxicity Test			√	√
Enchytraeidae reproduction test or earthworm reproduction test[5]				√
*Q: annual tonnage quantity to be notified				

[1]The ready bio-degradability test data should be obtained by appropriate testing methods for the physical properties of the notified substance.

[2]For Band 2 to 4, if the substance is not readily bio-degradable, the inherent biodegradability test data must be provided. If the substance is not bio-degradable, the relevant pH-related hydrolysis test data must be provided.

[3]Only required when the solubility in water is <1mg/L, and soil adsorption coefficient (log Koc) >3.5.

[4]One of the following tests shall be performed for Band 3: an early life-stage toxicity test on fish, a short-term toxicity test on embryo and sac-fry stages on fish, or a juvenile growth test on fish.

For Band 4, a juvenile growth test on fish shall be performed.

[5]When the test result of terrestrial acute toxicity test shows hazard classification according to relevant national or industrial standards, this test shall be performed.

Annex 3

Exemption conditions of physico-chemical testing data for regular notification

Data Requirement	Conditions and Description of Exemptions*
Melting point(°C)	- Melting point/freezing point below -20°C.
Boiling point (°C)	- For gases; - For solids which either melt above 300°C or decompose prior to boiling. In such cases, the boiling point under reduced pressure may be estimated or measured; - For substances which decompose before boiling.
Density (kg/m^3)	- For gases; - If the substance is only stable in solution of a particular solvent where the solution density is similar to that of the solvent. In such cases, an indication of whether the solution density is higher or lower than the solvent density is sufficient.
Vapor pressure (kPa, °C)	- Melting point above 300°C. - If the melting point is between 200°C and 300°C, a limit value based on measurement or any recognized calculation method is sufficient.
Surface tension (N/m)	- Water solubility is below 1 mg/L at 20°C.
Auto-ignition temperature (°C)	- The substance is explosive or ignites spontaneously when exposed to air at room temperature; - For gases with no flammable range; - For liquids that are not readily flammable when exposed to air; Such as the flash point is greater than 200°C - For solids: if the substance has a melting point ≤160°C, or if preliminary results show the substance is not self-heating at up to 400°C.
Flash point (°C)	- The substance is inorganic; - The substance is in an aqueous solution which contains only inorganic substance with a flash-point above 100°C ; - The estimated flash-point is above 200°C; - The flash-point can be accurately predicted by extrapolation of existing data.
Partition coefficient of n-octanol/water (log Pow)	- The substance is inorganic.
Water solubility (g/L)	- The substance hydrolyzes at pH 4, 7 and 9 (DT_{50}<12h); - The substance is readily oxidized in water; - If the substance appears 'insoluble' in water, a limit test up to the detection limit shall be performed.

Oxidizing properties	- The substance is explosive; - The substance is highly flammable; - The substance is an organic peroxide (whose category is verified by testing); - The substances do not contain high electronegative atom; - The substance contains no highly electronegative atoms; - The substance is incapable of reacting exothermically with combustible materials; Such as judging based on the chemical structure (e.g. Organic compounds that does not contain oxygen or halogen atoms; or organic compounds containing oxygen or halogen atoms but these atoms are not chemically bonded with nitrogen or oxygen; or inorganic compounds that does not contain oxygen or halogen atoms.) ~~Full testing does not need to be conducted for solids, if a preliminary test clearly indicates that the test substance has oxidizing properties~~
Flammability	- The substance is a solid which possesses explosive or pyrophoric properties; - For substances which spontaneously ignite when in contact with air.
Explosive properties	- There are no chemical groups associated with explosive properties present in the molecule; - The substance contains chemical groups associated with explosive properties which include oxygen but the calculated oxygen balance is less than -200; - The substance contains chemical groups associated with explosive properties, but the exothermic decomposition energy is less than 500 J/g or the onset of exothermic decomposition is below 500°C;
Granulometry(μm)	- The substance is marketed or used in a non-solid or non-granular form.
Stability in organic solvents and the properties of degradable products	- The substance is inorganic.
*Only one condition is considered to be sufficient for exemption of the testing data from the several conditions that are simultaneous displayed (except for those specially indicated).	

Annex 4

Exemption conditions of toxicology testing data for regular notification

Data Requirement	Conditions and Description of Exemptions[1]
Acute oral toxicity	- The substance is gaseous at standard temperature and pressure. - The substance is classified as corrosive to skin.
Acute dermal toxicity	- The substance is gaseous at standard temperature and pressure; - The substance cannot diffuse readily across skin membranes. - The substance is classified as corrosive to skin.
Acute inhalational toxicity	- The vapor pressure of the substance is below 10^{-1}Pa at 20°C; - The granulometric distribution of the inhalable section of the substance (Particle size <10μm) is below 1% (w/w), and under the desired conditions of use the suspended solid particle or liquid-drop MMAD is above 100 μm. - The substance is classified as corrosive to skin.
Skin irritation or Skin corrosion	- The substance is gaseous at standard temperature and pressure; - The substance is flammable when exposed to air at room temperature; - An acute dermal toxicity study does not indicate skin irritation up to the limit dose level (2,000 mg/kg body weight). - The substance is strongly acidic (pH<2.0) or strongly basic (pH>11.5); - An acute dermal toxicity study indicates that the substance is ~~very toxic when in contact with skin~~ classified as acute dermal toxicity Category 1; - The (Q)SARs data shows that the substance is a strong irritant or corrosive (if this is the case, the substance is then automatically considered to be a skin irritant or corrosive to skin); - The available information shows that the substance is corrosive when in contact with skin (in such case, the substance is considered to be skin irritant or corrosive).
Eye irritation	- The substance is flammable when in contact with air at room temperature; - The substance is strong acidic (pH<2.0) or strongly basic (pH>11.5); ~~- Skin irritation tests indicate a medium or above toxicity level;~~ - Skin irritation category 2 (included) and above or corrosive to skin; - The available information shows that the substance is an eye irritant (in such cases, the substance is considered to be an eye irritant).
Skin sensitization	-The substance is gaseous at room temperature and atmosphere pressure; - The substance is flammable when in contact with air at room temperature; - The substance is strongly acidic (pH<2.0) or strongly basic (pH>11.5); - The substance is a strong irritant and corrosive at the expected use

	concentration; -The structure of the substance is similar to one that is known to be classified as a skin sensitizer (in such cases, the substance is considered to be a skin sensitizer).
Repeated oral toxicity (28 days)	- The substance is gaseous at room temperature and atmosphere pressure ; - The substance undergoes immediate disintegration and there is sufficient data on the decomposed products; - Reliable combined repeated dose toxicity study with the reproduction/developmental toxicity screening test, repeated oral (90 days) or chronic oral toxicity study is available; - The substance is classified as corrosive to the skin;
Repeated dermal toxicity (28 days)	- The substance is gaseous at room temperature and atmosphere pressure; - The substance has been demonstrated to not be readily absorbed by skin, based on its physico-chemical and toxicological properties; - The substance undergoes immediate disintegration and there is sufficient data on the decomposed products; - A reliable repeated (90 days) dermal or chronic dermal toxicity study is available; - The substance is classified as corrosive to the skin;
Repeated inhalational toxicity (28 days)	- Vapor pressure of the substance is below 10^{-1}Pa at 20°C; - The granulometric distribution of the inhalable section of the substance (particle size <10μm) is below 1%(w/w), and under the desired conditions of use, the suspended solid, particle or liquid-drop MMAD is above 100 μm; - The substance undergoes immediate disintegration and there is sufficient data on the decomposed products; - A reliable repeated (90 days) inhalational or chronic inhalational toxicity study is available;
Repeated dose toxicity (90 days)	- The substance undergoes immediate disintegration and there is sufficient data on the decomposed products; - A reliable chronic study is available, provided that the same test species and route of administration are used; -the 28 day repeated dose toxicity study show irreversible toxicity, or the 'No Observed Adverse Effect Level' (NOAEL) value is extremely low[2]. -The substance is known to be carcinogenic (category 1 or 2);
Mutagenicity	- The substance is known to be carcinogenic (category 1 or 2); or reproductive/developmental toxic category 1 or 2 (i.e. the substance is considered to be germ-cell mutagenic, carcinogenic or reproductively/developmentally toxic); -If there has been *in vivo* genetic toxicity tests, then the *in vitro*

	genetic toxicity test with the same toxic end can be waived.
Reproductive/Developmental toxicity	- The pre-natal developmental toxicity, two-generation reproductive toxicity data or the extended one generation reproductive toxicity data are available (in such cases, the screening test for reproductive/developmental toxicity shall be waived); - The substance is known to be carcinogenic (category 1or 2); - The substance is known to be germ-cell mutagenic (category 1 or 2); - The substance is known to meet the classification criteria of reproductive toxicity category 1 or 2; -The latter 3 cases shall be considered to be germ-cell mutagenic, carcinogenic or reproductively/developmentally toxic.
Carcinogenicity	~~- The substance is known to be germ-cell mutagenic or reproductively toxic (the substance is considered to be germ cell mutagenic, carcinogenic, or reproductively/developmentally toxic)~~ - The substance is known to be germ-cell mutagenic, category 1A or 1B; -There is the combined test of chronic toxicity and carcinogenicity;
Chronic toxicity	-The 'No Observed Adverse Effect Level' (NOAEL) value from repeated dose toxicity study is extremely high (90-day NOAEL≥300mg/kg). However, if the toxicological effects resulting from specific molecular structure are not detected in the 90-day repeated dose toxicity study, or it is known that the substance may have hazard properties that cannot been detected in the 90-day repeated dose toxicity study, it can be exempt; ~~- Target Organ Toxicity (repeated dose) for the substance is 'unclassified'~~ -There is adequate toxicokinetics data to illustrate long-term toxicity of the substance; -There is the combined test of chronic toxicity and carcinogenicity
[1]Only one condition is considered to be sufficient for exemption of the testing data from the several conditions that are simultaneous displayed (except for those specially indicated). [2]The "No observed adverse effect level is low" means that no observed effect level in the 28 days repeated toxicity study is <100mg/kg (oral), <200mg/kg (dermal), <0.25mL/L (inhalation, gas) <1mg/L (inhalation, steam), <0.2mg/L (inhalation, dust / fumes).	

Annex 5

Exemption conditions of eco-toxicology testing data for regular notification

Data Requirement		Conditions and Description of Exemptions[1]
Growth inhibition toxicity study on algae		- Water solubility is less than 1mg/L and the substance is impossible to cross biological membranes[2]
Acute toxicity testing on *Daphnia Magna*		- Water solubility is less than 1mg/L and the substance is impossible to cross biological membranes[2]; - A long-term aquatic toxicity study on the same species in which the effective acute toxicity data is available, such as a daphnia magna reproduction test
Acute toxicity testing on fish		- Water solubility is less than 1mg/L and the substance is impossible to cross biological membranes[2]; - A long-term aquatic toxicity study on the same species in which the effective acute toxicity data is available, such as 14 day prolonged fish toxicity testing , chronic fish toxicity testing, etc.
~~14 day prolonged fish toxicity testing~~		~~- Water solubility is less than 1mg/L and the substance is unlikely to cross biological membranes~~
Daphnia Reproduction Test		- Water solubility is less than 1mg/L and the substance is impossible to cross biological membranes[2].
Effects on terrestrial organisms	Acute toxicity testing on earthworm	- The substance has been proven to have quite a low potential to be adsorbed to soil (e.g. log Koc<1.5); - If substances have a high potential to be adsorbed to soil (e.g. log Koc>4.5), the notifier shall consider long-term toxicity studies instead of short-term toxicity studies.
	Long term toxicity testing on earthworm	
	Seed germination and root elongation toxicity test	
	Long-term toxicity to plants	
	Effects on soil micro-organisms	
Activated sludge respiration inhibition testing		- There are data indicating that microbial toxicity is unlikely to occur, for instance the substance shows no microbe toxicity at soil microorganism carbon/nitrogen transformation test ~~saturated solubility~~;

		- If there are data indicating that the substance is likely to be an inhibitor of micro-organism, in particular nitrifying bacteria, then the test can be replaced by nitration inhibition test.
Adsorption/Desorption		- The substance and its relevant degradation products decompose rapidly, for example hydrolysis half-time <12h.
Degradability	Abiotic degradability	- The substance is readily biodegradable; - If the substance is highly insoluble in water, a hydrolysis test may be waived.
	Ready biodegradability	- For inorganic substances;
	Inherent biodegradability	- For inorganic substances; - The substance is readily biodegradable.
Bioaccumulation	Bioaccumulation in aquatic species, preferably fish	- The substance has a quite low potential for bioaccumulation in organisms (for instance log Kow < 3); - The substance is impossible to cross biological membranes; - The substance is readily biodegradable.

[1]Only one condition is considered to be sufficient for exemption of the testing data from the several conditions that are simultaneous displayed (except for those specially indicated).
[2]The biological membranes permeability tests of new substance or its analogue should be submitted. If the biological membranes permeability test data is not available, the explanation should be provided, as well as the biological membranes prediction report by software or description and summary of the literature.