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

· **1.1 Product identifier**

· **Trade name:** **Hydro-Solv DuroKlor 110**

· **CAS Number:**
51580-86-0

· **EC number:**
220-767-7

· **Index number:**
613-030-01-7

· **Registration number** 01-2119489371-33

· **1.2 Relevant identified uses of the substance or mixture and uses advised against**
Industrial manufacture of articles; surface treatments and adhesives; Textile treatment; cleaning products.

· **Sector of Use**
SU3 Industrial uses: Uses of substances as such or in preparations at industrial sites
SU5 Manufacture of textiles, leather, fur
SU10 Formulation [mixing] of preparations and/or re-packaging (excluding alloys)
SU21 Consumer uses: Private households / general public / consumers
SU22 Professional uses: Public domain (administration, education, entertainment, services, craftsmen)

· **Product category**
PC1 Adhesives, sealants
PC9a Coatings and paints, thinners, paint removers
PC9b Fillers, putties, plasters, modelling clay
PC15 Non-metal-surface treatment products
PC20 Processing aids such as pH-regulators, flocculants, precipitants, neutralization agents
PC21 Laboratory chemicals
PC23 Leather treatment products
PC34 Textile dyes, and impregnating products
PC35 Washing and cleaning products (including solvent based products)
PC37 Water treatment chemicals
PC39 Cosmetics, personal care products

· **Application of the substance / the mixture**
Water treatment
Biocides Product Type:
• PT2 - Private and public health area disinfectants and other biocidal products
• PT3 - Veterinary hygiene biocidal products
• PT4 - Food and feed area disinfectants
• PT5 - Drinking water disinfectants
• PT11 - Preservatives for liquid-cooling and processing systems

· **Uses advised against**
Any use involving aerosol formation or vapour or dust release in excess of the assigned workplace exposure limits where workers are exposed without suitable respiratory protective equipment (RPE).
Any use carrying a risk of direct contact with eyes/skin where workers are exposed without adequate personal protective equipment (PPE).
Processes involving the use of incompatible substances - refer to section 10.
Processes involving extreme heat use advised against.

· **1.3 Details of the supplier of the safety data sheet**

· **Manufacturer/Supplier:**

Hydro-X Group
Unit 1, Manor Drive,
Outgang Lane,
Dinnington,
South Yorkshire,
S25 3QU
info@hydro-x.co.uk(email)

· **Further information obtainable from:** Product safety department.

· **1.4 Emergency telephone number:** **01909 565133 (not 24 hours)**

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SECTION 2: Hazards identification

· **2.1 Classification of the substance or mixture**
· **Classification according to Regulation (EC) No 1272/2008**

GHS09 environment

Aquatic Acute 1	H400	Very toxic to aquatic life.
Aquatic Chronic 1	H410	Very toxic to aquatic life with long lasting effects.

GHS07

Acute Tox. 4	H302	Harmful if swallowed.
Eye Irrit. 2	H319	Causes serious eye irritation.
STOT SE 3	H335	May cause respiratory irritation.

· **2.2 Label elements**
· **Labelling according to Regulation (EC) No 1272/2008**
The substance is classified and labelled according to the CLP regulation.
· **Hazard pictograms** GHS07, GHS09
· **Signal word** Warning
· **Hazard statements**
H302 Harmful if swallowed.
H319 Causes serious eye irritation.
H335 May cause respiratory irritation.
H410 Very toxic to aquatic life with long lasting effects.
· **Precautionary statements**

P260	Do not breathe dust.
P220	Keep away from acids.
P280	Wear protective gloves/protective clothing/eye protection/face protection.
P273	Avoid release to the environment.
P270	Do not eat, drink or smoke when using this product.
P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

· **Additional information:**
EUH031 Contact with acids liberates toxic gas.
· **2.3 Other hazards**
· **Results of PBT and vPvB assessment**
· **PBT:** Not applicable.
· **vPvB:** Not applicable.

SECTION 3: Composition/information on ingredients

· **3.1 Chemical characterisation: Substances**
· **CAS No. Description**
51580-86-0 Sodium dichloroisocyanurate, dihydrate
· **Identification number(s)**
· **EC number:** 220-767-7
· **Index number:** 613-030-01-7

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SECTION 4: First aid measures

· **4.1 Description of first aid measures**
· **General information:**
Immediately remove any clothing soiled by the product.
Symptoms of poisoning may even occur after several hours; therefore medical observation for at least 48 hours after the accident.
· **After inhalation:** Supply fresh air; consult doctor in case of complaints.
· **After skin contact:**
Immediately wash with water and soap and rinse thoroughly.
If skin irritation continues, consult a doctor.
· **After eye contact:**
DO NOT DELAY!
Check for and remove any contact lenses.
Rinse opened eye for several minutes under running water. Then consult a doctor.
· **After swallowing:**
DO NOT DELAY!
Rinse out mouth and then drink plenty of water.
Do not induce vomiting; call for medical help immediately.
Call for a doctor immediately.
If vomiting occurs spontaneously, keep head below hips to prevent aspiration.
If vomiting occurs spontaneously, keep airway clear. Drink more water when vomiting stops. Seek medical attention immediately
· **4.2 Most important symptoms and effects, both acute and delayed**
No further relevant information available.
· **Information for doctor:** Treat symptomatically and supportively.
· **4.3 Indication of any immediate medical attention and special treatment needed**
No further relevant information available.

SECTION 5: Firefighting measures

· **5.1 Extinguishing media**
· **Suitable extinguishing agents:**
Alcohol resistant foam
Carbon dioxide
· **For safety reasons unsuitable extinguishing agents:**
Do not use ABC extinguishers containing nitrogen, due to risk of violent chemical reaction.
· **5.2 Special hazards arising from the substance or mixture**
During heating or in case of fire poisonous gases are produced.
Non-combustible solid.
Freely soluble in water.
Unlike the water-free compound troclosene sodium dihydrate is not classified as oxidizing. However, it enhances combustion of other substances.
Ambient fire may liberate hazardous vapours or decomposition products: Nitrous gases (nitric oxides); Hydrogen chloride.
· **5.3 Advice for firefighters**
· **Protective equipment:**
Wear fully protective suit.
Wear self-contained respiratory protective device.
Do not inhale explosion gases or combustion gases.
· **Additional information**

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In case of ambient fire:
- Cool surrounding containers with water spray.
- If possible, take container out of dangerous zone.
- Contain vapours with water spray.
- Do not allow runoff to get into the sewage system.

SECTION 6: Accidental release measures

· **6.1 Personal precautions, protective equipment and emergency procedures**
Wear protective equipment. Keep unprotected persons away.
Ensure adequate ventilation
Avoid formation of dust.
· **6.2 Environmental precautions:**
Do not allow to enter sewers/ surface or ground water.
Do not allow to penetrate the ground/soil.
· **6.3 Methods and material for containment and cleaning up:**
Ensure adequate ventilation.
Pick up mechanically.
Send for recovery or disposal in suitable receptacles.
Do NOT absorb in saw-dust or other combustible absorbents.
DO NOT add water to spilled materials.
DO NOT use floor sweeping compounds to clean up spills.
Every attempt should be made to avoid mixing spilled material with other chemicals or debris when cleaning up.
DO NOT attempt to reseal any contaminated drums.
DO NOT transport wet or damp material. Damp material should be neutralized to a safe state.
· **6.4 Reference to other sections**
See Section 7 for information on safe handling.
See Section 8 for information on personal protection equipment.
See Section 13 for disposal information.

SECTION 7: Handling and storage

· **7.1 Precautions for safe handling**
Ensure good ventilation/exhaustion at the workplace.
Prevent formation of dust.
Avoid contact with clothing and other combustible materials.
Avoid direct contact (skin/eye contact, ingestion and/or inhalation of fume/mist/dust) with the product in the undiluted form.
Do not mix with acids.
Safety showers and eye wash facilities should be available at the work area.
Welding and other hot work operations in the work area must only be permitted under supervision.
Conduct maintenance and other work on or in storage/reactor/mixing vessels or closed spaces ONLY under strict Permit to Work conditions.
Never add water to the product. Always add product to large quantities of water. Use clean dry utensils. Do not add the product to any dispensing device containing residuals of other products.
Chlorine and chlorine compounds may be found in slight amounts in the head space of containers.
· **Information about fire - and explosion protection:**
Keep respiratory protective device available.
When heated up or inclused in a surroundings fire the material can decompose explosively.
Keep away from open flames.
Welding only under supervision.
Only work with vessels and lines after these have been thoroughly rinsed.
Work done with fire or open flame should only be carried out with written permission if the risk of fire or explosion cannot be completely eliminated.

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· **7.2 Conditions for safe storage, including any incompatibilities**
· **Storage:**
· **Requirements to be met by storerooms and receptacles:** Prevent any seepage into the ground.
· **Information about storage in one common storage facility:**
Do not store together with acids.
Store away from flammable substances.
Store away from reducing agents.
Store away from foodstuffs.
Store away from oxidising agents.
Do not store together with alkalis (caustic solutions).
· **Further information about storage conditions:**
Store in cool, dry conditions in well sealed receptacles.
Store in a bunded area.
· **7.3 Specific end use(s)** No further relevant information available.

SECTION 8: Exposure controls/personal protection

· **Additional information about design of technical facilities:** No further data; see item 7.

· **8.1 Control parameters**

· **Ingredients with limit values that require monitoring at the workplace:**	
51580-86-0 Sodium dichloroisocyanurate, dihydrate	
WEL	Short-term value: 0.07 mg/m³ Long-term value: 0.02 mg/m³ Sen; as -NCO

· **DNELs**
WORKERS
Long-term exposure - systemic effects
Dermal DN(M)EL
- DNEL (Derived No Effect Level): 2.3 mg/kg bw/day
Inhalation DN(M)EL
- DNEL (Derived No Effect Level): 8.11 mg/m³

GENERAL POPULATION
Long-term exposure - systemic effects
Dermal DN(M)EL
- DNEL (Derived No Effect Level): 1.15 mg/kg bw/day
Inhalation DN(M)EL
- DNEL (Derived No Effect Level): 1.99 mg/m³
Oral DN(M)EL
- DNEL (Derived No Effect Level): 1.15 mg/kg bw/day
· **PNECs**
PNEC aqua (freshwater): 0.00017 mg/L
PNEC aqua (marine water): 1.52 mg/L
PNEC aqua (intermittent releases): 0.0017 mg/L
PNEC STP: 0.59 mg/L
PNEC sediment (freshwater): 7.56 mg/kg sediment dw
PNEC soil: 0.756 mg/kg soil dw
· **Additional information:** The lists valid during the making were used as basis.

· **8.2 Exposure controls**
· **Personal protective equipment:**
Select PPE appropriate for the operations taking place taking into account the product properties.
· **General protective and hygienic measures:**
Keep away from foodstuffs, beverages and feed.
Immediately remove all soiled and contaminated clothing
Wash hands before breaks and at the end of work.

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Avoid contact with the eyes and skin.
Do not eat, drink, smoke or sniff while working.
Do not breath dust
A safe system of work must be formulated and followed to ensure safe working with this product. Relevant workers must receive suitable and sufficient training and supervision.
Take note of assigned Workplace Exposure Limits.
Ensure that eyewash stations and safety showers are close to the workstation location.
Depending on the degree of exposure, periodic medical examination is suggested.

· **Respiratory protection:**
In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use self-contained respiratory protective device.
Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.
If respiratory protection is required, institute a complete respiratory protection program including selection, fit testing, training, maintenance and inspection.

· **Protection of hands:**
The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.
Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation

· **Material of gloves**
The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer.

· **Penetration time of glove material**
The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

· **Eye protection:**

Tightly sealed goggles

· **Body protection:**
Protective work clothing
Body protection must be chosen depending on product properties, activity and possible exposure.

SECTION 9: Physical and chemical properties

· **9.1 Information on basic physical and chemical properties**	
· **General Information**	
· **Appearance:**	
Form:	Granulate
Colour:	White
· **Odour:**	Like chlorine
· **pH-value (10 g/l) at 25 °C:**	6-7
· **Change in condition**	
Melting point/freezing point:	decomp. >252 °C
Initial boiling point and boiling range:	Undetermined.
· **Flash point:**	Not applicable.
· **Flammability (solid, gas):**	Product is not flammable.
· **Ignition temperature:**	250 °C
· **Explosive properties:**	Product does not present an explosion hazard.
· **Density at 20 °C:**	0.97 g/cm³
· **Bulk density at 20 °C:**	1000 kg/m³

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· **Solubility in / Miscibility with water at 25 °C:**	>10 g/l*
· **9.2 Other information**	*Sodium dichloroisocyanurate hydrolyses rapidly upon addition to water.

SECTION 10: Stability and reactivity

· **10.1 Reactivity** No further relevant information available.
· **10.2 Chemical stability**
· **Thermal decomposition / conditions to be avoided:**
The substance decomposes on heating, on contact with water, producing toxic fumes including chlorine.
· **10.3 Possibility of hazardous reactions**
Chlorine will be released in acidic conditions.
The substance has oxidising properties and reacts violently with combustible and reducing materials. Reacts violently with many substances, causing fire and explosion hazard.
Risk of fire and explosion on contact with strong reducing agents, strong bases, ammonia, urea, water.
· **10.4 Conditions to avoid** No further relevant information available.
· **10.5 Incompatible materials:**
Strong acids and oxidising agents
Substances specificaly listed in section 10.3 as incompatible.
Strong reducing agents, strong bases, ammonia, urea, chlorine agents, oils/fats and flammable materials.
· **10.6 Hazardous decomposition products:**
Hydrogen cyanide (prussic acid)
Chlorine, Nitrogen trihloride, Hydrogen chloride, Nitrogen oxide, and carbon monoxide.
Decomposes at 240 degrees C forming chlorine, nitrogen trichloride, NOx, COx, cyanates.
· **Additional information:**
Non-combustible solid.
Freely soluble in water.

SECTION 11: Toxicological information

· **11.1 Information on toxicological effects**
· **Acute toxicity**
Harmful if swallowed.

· **LD/LC50 values relevant for classification:**		
Oral	LD50	1500 mg/kg (rat)
Dermal	LD50	>5000 mg/kg (rabbit)

· **Primary irritant effect:**
· **Skin corrosion/irritation** Based on available data, the classification criteria are not met.
· **Serious eye damage/irritation**
Causes serious eye irritation.
· **Respiratory or skin sensitisation** Based on available data, the classification criteria are not met.
· **Other information (about experimental toxicology):**
ROUTES OF EXPOSURE:
The substance can be absorbed into the body by inhalation of dust and by ingestion.

INHALATION RISK: Evaporation at 20 °C is negligible; a harmful concentration of airborne particles can, however, be reached quickly.

EFFECTS OF SHORT-TERM EXPOSURE: The substance irritates the eyes, the skin and the respiratory tract. Corrosive on ingestion.
· **Subacute to chronic toxicity:**
EFFECTS OF LONG-TERM OR REPEATED EXPOSURE: Repeated or prolonged contact with skin may cause dermatitis.

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· **CMR effects (carcinogenity, mutagenicity and toxicity for reproduction)**
· **Germ cell mutagenicity** Based on available data, the classification criteria are not met.
· **Carcinogenicity** Based on available data, the classification criteria are not met.
· **Reproductive toxicity** Based on available data, the classification criteria are not met.
· **STOT-single exposure**
May cause respiratory irritation.
· **STOT-repeated exposure** Based on available data, the classification criteria are not met.
· **Aspiration hazard** Based on available data, the classification criteria are not met.

SECTION 12: Ecological information

· **12.1 Toxicity**
· **Aquatic toxicity:** No further relevant information available.
· **12.2 Persistence and degradability**
This material is believed not to persist in the environment. Free available chlorine is rapidly consumed by reaction with organic and inorganic materials to produce chloride ion. The stable degradation products are chloride ion and cyanuric acid.
· **12.3 Bioaccumulative potential**
Product is not expected to bioaccumulate.
This material hydrolyses in water liberating free available chlorine and cyanuric acid. These products are not bioaccumulative.
· **12.4 Mobility in soil** No further relevant information available.
· **Ecotoxical effects:**
· **Remark:** Very toxic for fish
· **Additional ecological information:**
· **General notes:**
Water hazard class 2 (German Regulation) (Self-assessment): hazardous for water
Do not allow product to reach ground water, water course or sewage system.
Danger to drinking water if even small quantities leak into the ground.
Also poisonous for fish and plankton in water bodies.
Very toxic for aquatic organisms
· **12.5 Results of PBT and vPvB assessment**
· **PBT:** Not applicable.
· **vPvB:** Not applicable.
· **12.6 Other adverse effects** No further relevant information available.

SECTION 13: Disposal considerations

· **13.1 Waste treatment methods**
· **Recommendation**
Recommended Hierarchy of Controls:
- Minimise waste;
- Reuse if not contaminated;
- Recycle, if possible; or
- Safe disposal (if all else fails).
Contact waste processors for recycling information.
Must not be disposed together with household garbage. Do not allow product to reach sewage system.
Used, degraded or contaminated product may be classified as hazardous waste. Anyone classifying hazardous waste and determining its fate must be qualified in accordance with state and international legislation.
· **European waste catalogue**
Waste key numbers in accordance with the European Waste Catalogue (EWC) are origin-referred defined. Since this product is used in several industries, no waste key can be provided by the supplier. The waste key number should be determined in arrangement with your waste disposal partner or the responsible authority.

· **Uncleaned packaging:**
· **Recommendation:**
Container remains hazardous when empty. Continue to observe all precuations.

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Do not mix with other waste streams.
Use or reuse if possible. This product is under review of the European Biocidal Products Directive(BPD). This material is a registered pesticide. Dispose in accordance with all applicable regulations. Do not put product, spilled product, or filled or partially filled containers into the trash or waste compactor. DO NOT transport wet or damp material. Damp material should be neutralized to a safe state.

SECTION 14: Transport information

· **14.1 UN-Number**	
· **ADR, IMDG, IATA**	3077
· **14.2 UN proper shipping name**	
· **ADR**	3077 ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Sodium dichloroisocyanurate, dihydrate)
· **IMDG, IATA**	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Sodium dichloroisocyanurate, dihydrate)
· **14.3 Transport hazard class(es)**	
· **ADR, IATA**	
· **Class**	9 Miscellaneous dangerous substances and articles.
· **Label**	9
· **IMDG**	
· **Class**	9 Miscellaneous dangerous substances and articles.
· **Label**	9
· **14.4 Packing group**	
· **ADR, IMDG, IATA**	III
· **14.5 Environmental hazards:**	
· **Marine pollutant:**	No
· **Special marking (ADR):**	Symbol (fish and tree)
· **Special marking (IATA):**	Symbol (fish and tree)
· **14.6 Special precautions for user**	Warning: Miscellaneous dangerous substances and articles.
· **14.7 Transport in bulk according to Annex II of Marpol and the IBC Code**	Not applicable.
· **Transport/Additional information:**	DO NOT transport wet or damp product.
· **ADR**	
· **Tunnel restriction code**	E
· **UN "Model Regulation":**	UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S., 9, III

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SECTION 15: Regulatory information

· **15.2 Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

SECTION 16: Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

· **Department issuing SDS:** Product safety department.
· **Abbreviations and acronyms:**
ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
IMDG: International Maritime Code for Dangerous Goods
IATA: International Air Transport Association
GHS: Globally Harmonised System of Classification and Labelling of Chemicals
EINECS: European Inventory of Existing Commercial Chemical Substances
CAS: Chemical Abstracts Service (division of the American Chemical Society)
DNEL: Derived No-Effect Level (REACH)
PNEC: Predicted No-Effect Concentration (REACH)
LC50: Lethal concentration, 50 percent
LD50: Lethal dose, 50 percent
PBT: Persistent, Bioaccumulative and Toxic
vPvB: very Persistent and very Bioaccumulative
Acute Tox. 4: Acute toxicity – Category 4
Eye Irrit. 2: Serious eye damage/eye irritation – Category 2
STOT SE 3: Specific target organ toxicity (single exposure) – Category 3
Aquatic Acute 1: Hazardous to the aquatic environment - acute aquatic hazard – Category 1
Aquatic Chronic 1: Hazardous to the aquatic environment - long-term aquatic hazard – Category 1