

Fluorosilicic Acid Spill Emergency Response Process

Water Services Work Instruction

Hazards	Personal Protective Equipment	Tools & Equipment
<p>Fluorosilicic Acid – Highly Corrosive Eyes – Severe Irritant Inhalation – Severe Irritant Skin – Severe Irritant Ingestion – Toxic Exposure could result in severe burns</p> <p>Soda Ash – Eyes – may be Corrosive Skin – Moderate Irritant Inhalation – Irritation Ingestion - Irritation</p>	<p>Safety Glasses Face shield Full-length Butyl Gloves Impervious Coveralls PVC Boots Inhalation risk – Full Face Type B Respirator Full body encapsulating suit for confined spaces Full face Air-line respirator for confined spaces</p>	<p>Litmus Paper Sealable Plastic Containers and Scoops</p>

This instruction details the emergency response process in the event of a Fluorosilicic Acid Spill at the Darwin River Dam Pumping Station.

Refer to Fluorosilicic Acid MSDS (Material Safety Data Sheet) which is kept in the Dosing Plant Control Room at all times.

Important Notes

- All Fluorosilicic Acid spillages, large or small, must be reported to the area supervisor immediately. If the supervisor is unable to be contacted, call Hudson Creek Systems Control immediately.
- No clean up of spill Fluorosilicic Acid shall be undertaken unless 2 properly trained PWC employees, wearing full PPE, as listed above, are present.
- The act of neutralising Fluorosilicic Acid itself can be hazardous, as adding Soda Ash to the Acid may create a volatile reaction. Carbon Dioxide and heat will be generated during the neutralisation process.
- In the event of spill to the environment, dial 000 for assistance.



Danger



Caution

Tag



Environmental



Permit



Document

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Fluorosilicic Acid Spill Emergency Response Process

Spill inside the bund at the Fluorosilicic Acid storage area

1. **Do not jeopardise your own safety at any time**, only proceed if it is safe to do so and ensure the area is well ventilated.
2. Ensure a 2nd person who is trained and authorised to operate the Fluorosilicic Acid Dosing Plant is present before attending to the spill.
3. Both personnel shall don the required PPE as listed above.
4. If the acid is still leaking, stop the leak or contain the spillage, but **only if it is safe to do so**.
5. Dilute the spilt acid with water before adding Soda Ash to neutralise it.

Note: Add the Soda Ash slowly as to prevent volatile reactions and minimise the generation of heat and carbon dioxide.

6. Test the solution with litmus paper to ensure it is effectively neutralised (pH between 6-8, ideally pH7).

Note: Another indication that the acid has been neutralised is that the solution will turn a cloudy colour.

7. The high conductivity alarm should have been activated, so once the solution has been neutralised, you will need to override the conductivity alarm.
8. Switch the monitor to standby and it will then allow you to open the valve which will allow the neutralised solution to transfer to the Collection Pit.
9. Contact the PWC Environmental Department for the disposal arrangements or instructions of the neutralised solution in the Collection Pit.

Spill into the truck apron

10. **Do not jeopardise your own safety at any time**, only proceed if it is safe to do so.
11. Ensure a 2nd person who is trained and authorised to operate the Fluorosilicic Acid Dosing Plant is present before attending to the spill.
12. Both personnel shall don the required PPE as listed above.
13. If the acid is still leaking, stop the leak or contain the spillage, but **only if it is safe to do so**.
14. Wash the apron down with water until all the Fluorosilicic Acid has been washed down the grate in the apron which leads to the Collection Pit.
15. Neutralise with Soda Ash both through the grate in the apron and into the Collection Pit.

Note: Add the Soda Ash slowly as to prevent volatile reactions and minimise the generation of heat and carbon dioxide.

Fluorosilicic Acid Spill Emergency Response Process

16. Test the solution with litmus paper to ensure it is effectively neutralised (pH between 6-8, ideally pH7) only if it can be safely accessed.

Note: Another indication that the acid has been neutralised is that the solution will turn a cloudy colour.

17. Contact the PWC Environmental Department for the disposal arrangements or instructions of the neutralised solution in the Collection Pit.

Spill outside the bund to the environment

18. Do not jeopardise your safety at any time.

19. Dial 000, advise of the type of emergency, state the chemical name (Fluorosilicic Acid) and UN Number - **1778**.
20. Contact Hudson Creek Systems Control and advise of the emergency and that 000 has been dialled.
21. Hudson Creek Systems Control will then deploy their emergency Response Procedures.
22. If possible station sentries in safe areas to prevent access by other persons.
23. Ensure a 2nd person who is trained and authorised to operate the Fluorosilicic Acid Dosing Plant is present before attending to the spill.
24. If it is safe to do so and all the above PPE has been donned, stop or contain the spill. **Do not enter the area if it is unsafe to do so.**
25. Do not attempt to clean up the spill, await instructions from the correct emergency response authority.