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New to water softening & hard water treatment? Our guide will tell you everything you need to know, from our water treatment experts. Water Softeners Salt-Free Conditioners Water softener systems are becoming a commonplace appliance in many households, with an estimated 25% of homeowners in the US choosing to soften their water. Water softeners are tank-based water treatment systems that remove hardness minerals (namely calcium and magnesium) from water, preventing hard water issues like limescale. In this guide, well be sharing all the details you need to know if youre curious about water softeners, including how theyre set up, how they work, and their benefits. If you find that water softeners arent right for you, weve also shared several alternatives to consider which can also address hard water problems. Thought there was only one type of water softener available? Fortunately not! It sometimes feels like manufacturers are set out to confuse us with all their different water treatment options, but actually, choice is a good thing. Each type of hard water treatment system has its own unique benefits, and when you understand the differences between them, you might just find that one system is particularly ideal for your needs. Water softeners use a process called ion exchange to replace hardness minerals with sodium ions in water. Quick science lesson: The ions involved in ion exchange (calcium, magnesium and sodium chloride) are all positively charged. Water softeners use a negatively charged resin bed that attracts sodium inside the system. When hard water flows through the softener, the calcium and magnesium ions are also attracted to the resin bed. When these ions stick to the resin, sodium releases into the water to balance the waters electrical charge. Read the long version of how water softeners work in the post. Traditional water softeners consist of two tanks: a resin tank and a brine tank. Brine, a salt-and-water solution, flows from the brine tank into the resin tank, saturating the negatively charged resin beads with positively charged sodium ions. Ion exchange system Once the sodium ions in the resin beads are depleted, the softener will regenerate, washing the hardness minerals out of the resin and replacing them with fresh sodium chloride. This process can continue consistently as long as you regularly top up the salt in the brine tank. Water softeners are softeners, so they remove the minerals that are responsible for water hardness: calcium and magnesium. Some water softeners can also remove low levels of iron, making them a good choice for anyone looking to soften their well water. Water softeners arent filters, so they cant remove contaminants that dont contribute to water hardness, like heavy metals and chlorine. Related: Diamond Crystal vs Morton Water Softener Salt Compared There are two types of salt-free water conditioners youre likely to come across today: TAC/NAC conditioners and citric acid conditioners. TAC/NAC (template-assisted crystallization/ nucleation-assisted crystallization) uses a media to condition water, preventing scale formation. TAC/NAC water conditioners dont remove hardness minerals or other minerals from water. Instead, these systems crystallize the hard water minerals, preventing them from being able to stick to surfaces. The benefit of TAC is that you can still benefit from calcium and magnesium in your tap water without having to deal with limescale. You also dont have to add salt to your water, which is a bonus if you want to limit your salt intake as much as possible. Related: Do salt free water softeners actually work? NAC media process Water conditioners using citric acid soften water using a process called chelation. Chelation meters citric acid into a hard water supply, causing the hardness ions to bind to the citric acid. The biggest perk of using citric acid to soften your water is that you dont have to use salt, and unlike water conditioners, chelation softeners physically remove calcium and magnesium from water. However, its important to be exact with how much citric acid is added to water. Too little, and your hard water will stay hard; too much, and your water will become acidic, presenting further cleaning problems especially if you have copper pipes. Electronic or magnetic descalers use magnets or a coil of wire placed around your main water pipe. Like water conditioners, water descalers dont technically soften water. Instead, these systems treat hard water by producing electromagnetic impulses that alter the composition of hard water minerals, preventing them from forming scale. The great thing about descalers is that theyre affordable, costing around $300-$500, and they require no maintenance whatsoever. However, the evidence to back up this descaling performance is limited, so its hard to know whether they truly work or not. Plus, theyre not recommended for homes in a very hard water area. Yarna descaler Further Reading Explained: The Pros and Cons of Water Softeners Water softeners arent as complicated as you might think. There are quite a few bits involved in a softening system, but you wont have to think about most of them once the system is installed. The three main components to be aware of in a traditional salt-based unit are the resin tank, the brine tank, and the control head. The resin tank is where a process called ion exchange takes place. Inside the resin tank are resin beads. These resin beads hold onto each individual sodium ion that passes into the tank. During the ion exchange process, the resin beads release sodium ions into the water, while calcium and magnesium minerals take their place inside the resin. You dont need to worry too much about the resin softener tank, as once youve set it to regenerate (more on that in the control head section), you can leave it to do its thing. Depending on the crosslink percentage of your resin, youll usually need to replace the resin beads every 8 to 10 years. The brine tank contains the water softener salt. When this softener tank fills with water, a brine solution (combining salt and water) is formed. This brine solution flows into the resin tank when the system regenerates. You should keep the tank at least 1/3 of the way full to ensure theres always enough salt in the system for the ion exchange process to take place. Check the tank every 4 weeks or so and add more salt if needed. Check out the top rated water softener salts. The control head gives you control over how the system operates. Youll be able to input important information about your water chemistry and average water usage, and program the system to perform a regeneration cycle at certain times. Once youve set the system using the control head, you can leave it to automatically follow your instructions. However, if you want to improve the efficiency of your softeners performance, its easy to amend your settings for more desirable results, whether thats more water softening or reduced water waste. Some water softeners have a Bluetooth app that lets you monitor and control your water softener from your phone, which can be a convenient option for some people. Water softeners work by using a process called ion exchange specifically, a type of ion exchange known as cation exchange. Here are the steps involved in this process: Hard water enters the water softeners resin tank, which contains a bed of negatively charged resin beads. Calcium and magnesium hardness ions in the water, which have a positive charge, are attracted to the negative charge of the resin bed. As water flows through the resin tank, these mineral ions stick to the resin beads. Positively charged sodium chloride ions, which are loaded in the resin beads, are released into the water. Sodium is released, equal to the amount of hardness minerals captured, balancing the waters charge. The water, now softened with sodium ions, leaves the water softener resin tank. Water softeners must regenerate to replenish the sodium ions and flush away the accumulated water hardness minerals. To regenerate, a water softener draws a highly concentrated solution of salty water (known as brine solution) out of the brine tank and flushes it through the resin beads. The process usually takes 2-3 hours in total. There are five stages involved when a water softener regenerates: Brine tank fill Water flows into the brine tank, filling to just below the salt level. Backwash The resin beads are flushed in a backwashing process, removing the minerals. Resin tank brine draw Brine is drawn from the brine tank and reverse ion exchange takes place. Brine rinse The brine valve closes and the resin is rinsed again. Lingering brine is washed down the drain. Fast rinse A final fast rinse cycle occurs in the resin, which causes the resin beads to become compacted and ready for the softening process once more. There are two common regeneration methods used in ion exchange water softeners: co-current and counter-current regeneration. Co-current regeneration sends the brine solution into the resin tank in the same direction as the water flow. As the brine solution flows through the resin beads, the hardness minerals are forced down through the system, causing them to constantly be exchanged and re-exchanged. Once the water reaches the bottom of the resin tank, the solution is weakened, and the resin beads with the highest charge are at the top of the tank. Counter-current regeneration sends brine up through the bottom of the regeneration tank. The brine solution flows in the opposite direction, first coming into contact with the bottom of the resin, which is typically less depleted than the top. There are fewer hardness minerals causing exchange and re-exchange as the brine flows through the resin, which means the brine is still relatively concentrated once it reaches the top of the tank. Counter-current regeneration distributes sodium ions more evenly around the resin, which saves about 65% water and 75% salt compared to a co-current water softener. Thefour key differencesbetween upflow and downflow water softeners are: The direction of flow.Upflow water softeners push brine up through the bottom of the resin bed, so thebrine waterflows upward towards the top of the tank. Downflow water softeners, on the other hand, send water down through the top of the resin tank, so water flows down towards the bottom of the tank. The efficiency of regeneration.The upflow regeneration process is about5% more efficientthan a downflow system.What does this mean?You should be able to save money and salt by using an upflow water softener. The thoroughness of brining.Because upflow water softeners more effectively send brine across the entire surface of the resin bed, they offer a more thorough brining process than downflow water softeners. The system components.While most components in upflow and downflow systems are the same, an upflow water softener doesnt need a backwash control valve, while a downflow softener does. Proportional vs automatic brining.Upflow water softeners are ideal when theyre used for proportional brining when a measured amount of salt is added based on how much of the resin bed needs to be regenerated. Downflow water softeners are more commonly associated with automatic brining. You have several choices when deciding on a water softener configuration for your home: Single-tank water softeners are the traditional water softener configuration. Single tank doesnt mean that a water softeners resin and brine tanks are packed into the same tank it just means that the system has one resin tank, not two. A single-tank system cant provide a softened water supply when the system is performing a regeneration cycle. Most people set their water softeners to regenerate at a time that they dont plan to use water, such as 3:00 AM, so theyll only ever use softened water in their home. Dual tank water softeners technically contain three tanks: two resin tanks and a salt tank. The biggest perk of a dual-tank softener is that the system can always be in use. While one resin tank is regenerating, the system will switch automatically to the other tank. This means youre never without softened water during the regeneration process. Owning a dual-tank water softener is beneficial if you have appliances running throughout the night, such as hot water heaters. Fleck 9100SXT Dual Tank system Portable water softeners arent actually portable, but theyre so-called because theyre much smaller than traditional water softeners. The system configuration is the same as a single-tank ion exchange water softener. The biggest difference is that this water softener is small enough to be installed in tight locations, such as in RVs and small vacation homes. Portable softener If youre looking for the combined benefits of water softening and filtration, combo systems tend to be the most high-efficiency choice. A combination filter-softener installed at your homes point of entry can soften your water and improve your water quality, removing common contaminants as well as hard minerals. This means you can benefit from tastier, safer, healthier drinking water as well as reducing the scale issues in your home. Water softener-filter combo systems usually consist of a separate water softener and a separate water filtration system that are designed to work in tandem to offer double the benefits. You should install a water softener unit before a water filtration system to prevent hard minerals from damaging the filter media. Filtration and softening system combo Before you jump into buying a water softening system for your home, there are a few things to think about. This is important it could make the difference between buying a system that works perfectly for you, and buying a system that doesnt work at all. Your water hardness is an obvious consideration to make before you invest in a water softener. Yes, all water softener systems are designed to tackle water hardness but the hardness of your water affects several buying decisions, including the grain capacity of a system. Some scale treatment systems simply arent designed for water exceeding a certain level on the hardness scale. HardnessGrains per Gallon (GPG)Parts per Million (PPM) & mg/LSoft10>180 You might know already that your water is hard, but you should still test your water with a laboratory or home testing kit to find out your exact hardness in PPM. Your water chemistry is another important consideration to make before buying a water softener, especially if you get your water from a private well. A pH range of between 6.5 and 8 is ideal for water softening. The ion exchange process is optimal at the neutral pH range, and if your water is too acidic or too alkaline, the process may not work effectively. Test your waters pH using a laboratory or an at-home test kit. Consider a treatment like soda ash/sodium hydroxide injection to boost your waters pH if its too acidic for proper water softening. While hard water minerals might be the most obvious water quality issue in your home, dont assume that thats all youre dealing with. If you have hard water, its more than likely that youre dealing with other problems in your water supply, too. Municipal water supplies contain traces of the following contaminants: Chlorine, chloramine, and disinfection byproducts Heavy metals like lead and arsenic Emerging contaminants like pharmaceuticals PFOA and PFOS Fluoride Well water supplies are more likely to contain the following impurities: Iron, sulfur, and manganese Microorganisms like bacteria and cysts Sediment, tannins, and turbidity Radon, arsenic, and VOCs Drinking even mildly contaminated water can have dangerous health effects, from sickness and diarrhea to long-term organ damage. If your goal is to improve the quality of your water, dont stop at water softening! Consider buying a water softener and filter combination to soften and filter your water, making it clean, healthy, tasty, and safe to drink. Again, if you dont know what your water supply contains, get it tested by a professional laboratory or use a home testing kit to find out which contaminants need to be dealt with ASAP. Weve touched on this already, but lets make it clearer: city and well water supplies are unique from one another, and may require their own unique treatments. Lets look at well water first. Well water may: Have a high hardness content Contain iron Have an acidic pH There are water softeners designed for well water, which can remove low levels of iron as well as high hardness. Moving onto city water. Municipal water supplies may: Have high hardness Contain little iron Have a neutral pH Its easier to find a water softener for city water than for well water because city water doesnt have iron or pH problems, as is more common with well water. With that said, water hardness isnt treated in city water before it reaches your home, meaning that your water supply may contain just as many hardness minerals as the private wells in your local area. Source: United States Geological Survey (USGS) Imagine spending thousands of dollars on a water softener, then putting hours of hard work into installing the thing only to find out that the type of softening system youve bought doesnt comply with your states rules. Many local authorities have their own regulations and plumbing codes for water softeners. Things like installation, maintenance, and even regeneration drain water may be regulated by your state, so check for any local requirements before you make a purchase. Your local plumber should be a good source of information if youre unsure about your areas regulations. Youre sure to get the right answers from an expert who has probably installed more water softeners than they can remember. Whether you own a house or apartment will probably affect the size of the water softener system you buy. We know were stereotyping here, but houses are generally more spacious than apartments. An apartment might have limited room at your homes point of entry, where the water softener should be installed. Houses tend to have more space, with a cupboard, garage, or even a basement providing the perfect location for water softener installation. Measure out your available space before buying a water softener. Make sure theres enough room to comfortably install and maintain the system, including topping up the salt and replacing the resin. You need to install your softener before your hot water heater, so unfortunately, you cant install it further down your waterline if there happens to be more space. If you own your home, lucky you! You can install whatever type of water softener, wherever you want. However, we know how many thousands of people choose to rent nowadays whether for the flexibility of not being tied down or simply for the fact that house prices are stomach-clenchingly expensive these days. If you rent your home, you may have a few hurdles to jump before you can buy and install a water softener. Some landlords are cool enough to listen to your requests to make changes to your rental property especially changes that will increase the value of a property and its appliances. Others wont allow you to install a water softener because of the invasive installation required. If you moved to a new home and decided to take your water softener with you, youd leave a gaping hole in your old homes waterline. Check your rental terms to see if theres any specific mention of installing water treatment systems. If there isnt, reach out to your landlord and prepare to do some convincing. If the answer is no, youll have to settle for a system that doesnt require cutting into your waterline, such as an electronic descaler. There are a variety of different technology types that can be used to soften your water. For instance, the best system for you may be a salt-based system if your water is very hard and you would rather remove all mineral ions from your water. Equally, you might not want to remove these ions, but only change their form to prevent them from producing limescale buildup, for which you might prefer one of the best salt-free softening units. A traditional water softener has two tanks and takes up a fair bit of space in your home. You probably wont be able to install a water softener inside a small cupboard. Open space is more convenient for installation and maintenance (like salt top-ups). Salt-free conditioners are more suitable for tight spaces because they only consist of a single tank. This single tank is still quite tall, so regardless of the system you buy, you should carefully measure your available space and compare these measurements to your chosen system. Limited space for installation Bypass valves are usually included in a water softeners installation kit. A bypass valve lets you divert water around the softener for any reason e.g. during maintenance, if the softener is experiencing problems, or you want to stop using the softener periodically. A bypass valve is more essential than most people realize. If your water softener has a major leak and you dont have a bypass valve, youll have to shut off your water supply entirely, which means your whole home wont have access to water until the problem is solved. If your preferred water softener doesnt come with a bypass valve, buy a valve separately when you buy the system. How much do you know about the all-important features of a water softener? Make sure youre aware of the following features while youre considering the best water softener system for you: Water softening systems on the market today vary in grain capacities from model to model. The average family will use around 3,000 grains per day. That means youll get around 1,960 days or 6 years out of a 64,000 grain water softener. Make sure to choose the right grain capacity based on your water consumption. Most systems are available in several grain capacities for different-sized households. For instance, a 30,000 grain water softener is ideal for homes with 1-3 bathrooms, with a lower water consumption than homes with 4+ bathrooms, 50,000-grain which require a softener. Grain Capacity Average Price Range 20,000 - 24,000$600 - $1,000 30,000 - 32,000$600 - $1,500 40,000 - 48,000$1,000 - $2,000 60,000 - 64,000$1,500 - $2,200 70,000 - 80,000$1,800 - $3,200+ A water softeners resin has a crosslink percentage resin. This percentage, which is either 8% or 10%, tells you the durability of the resin. A standard water softener has an 8% resin crosslink percentage. If you can afford to spend more money on a 10% crosslink resin that lasts longer, look for this feature in a water softener. 10% crosslink resins last up to 20 years, while an 8% crosslink resin has a shorter lifespan of between 10 and 12 years. The longer-lasting the resin, the less frequently youll need to change it to keep your softening system alive. The flow rate of a water softener is based on its capacity. Large water softeners designed for homes with 3+ bathrooms have a faster water softener flow rate than average-sized water softeners designed for 1-3 bathrooms. Most water softeners have a flow rate of 7-12 GPM. Ion exchange doesnt slow down water flow like a filter does, so your water pressure shouldnt drop significantly from using a water softener. At most, youll need to wait a couple of seconds after turning on your faucet. Make sure to choose the right flow rate for your home. Overcompensating with a system thats too big can be just as damaging as using a system thats too small. A flow rate of up to 12 GPM is ideal for most families. All traditional salt-based water softeners need to regenerate. The resin bed holds onto sodium ions, which are used in ion exchange. When the resin runs out of sodium, the regeneration process replenishes the resin bed with sodium ions. There are a few different ways in which a water softener can regenerate. Weve outlined your options and which is best below. Timed regeneration is water softener regeneration set for a set time on a recurring basis (usually at 3 am, twice or three times per week). Timed regeneration means you dont have to worry about programming the softener to regenerate yourself, and the system will regenerate when you dont need to use water. The disadvantage of timed regeneration is that the softener will regenerate according to a set schedule, rather than when it needs to replenish the resin. Metered regeneration is regeneration triggered by water usage. When the water softener has used so much water, the system predicts that the resin will need replenishing, and itll automatically regenerate. Metered regeneration is better for avoiding salt and water waste because the system only regenerates when it needs to. Manual regeneration allows you to input your own timings for regeneration into the system. Being able to manually time regenerations means you can ensure the softener is out of use when you dont need water (i.e. in the middle of the night). However, youll probably end up triggering regeneration when the softener doesnt need to regenerate. The best sign that you can trust a water softener manufacturer is an NSF or WQA certification. Certifications by these independent testing organizations prove that a water softener does what its advertised to do and meets customer demands. Water softeners dont need to be legally certified, but a certification works in the manufacturers favor, telling customers that their product can remove hard water minerals and/or iron. At the moment, only traditional salt-based water softeners can be certified for performance. When browsing your options, look out for these certifications: NSF/ANSI 44 the most important certification youll find for ion or cation exchange water softeners using salt or potassium chloride. An NSF 44 certification tells you that a water softener can remove hardness minerals to at least 1 GPG (grain per gallon). Systems certified to this NSF standard also meet safety and structural integrity requirements. NSF/ANSI 372 softeners with this NSF certification have a lead-free construction and dont leach metals into your water. This certification can be achieved by both softeners and conditioners because its based on design, not performance. So, what is a water softener priced at? Can you afford a water softener for your home? Its something to put a lot of thought into before you make the investment. The average cost of a water softener is $1,200-$1,800. There are a lot of things that can affect the cost of a water softener, including: Whether it offers additional benefits (e.g. it can remove iron) Whether it offers a high-efficiency performance that helps you save water, money, and salt Whether its easy to install yourself Whether it has any fancy tech features (e.g. a touch screen control head or Bluetooth configuration) The systems capacity (the lower-price systems have a smaller resin bed) The systems size (e.g. dual-tank systems cost more) We wouldnt recommend paying any less than $800 for a traditional salt-based water softener. You want to make sure that your water softener works as advertised, and if you spend any less than $800, you may end up falling for a deal thats too good to be true. Be prepared to do some saving if youve decided you want a water softener for your home. The average price is $1,000-$1,500. Water softeners are expensive, but for many people, theyre an essential investment and they pay for themselves in a few short years. This expensive upfront cost is one of the few water softener disadvantages. The price of a water softener depends on factors like: System capacity the bigger the system, the more expensive it is The manufacturer more well-known brands can charge more than lesser-known manufacturers The systems features smart, efficient, money-saving features come at a premium upfront price Where you buy the system from buying directly from the manufacturer is often cheaper, especially if you have an affiliate discount code You should prepare to spend $800 minimum on a water softener any cheaper and youll end up regretting your purchase. System TypeAverage Price Range Single Tank Ion Exchange$800 - $2,000+ Dual Tank Ion Exchange$1,500+ Salt-free Conditioners$500 - $2,800 Portable Ion Exchange$150 - $400 Commercial Systems$2,000+ Electronic/ Magnetic Descalers$50 - $300 Tanks Only$100 Installation Youll need to consider installation costs whether youre looking at a salt-based softener or a salt-free conditioner. Both systems require hooking up to your waterline, and you might not have the time, skills, or patience for such a big DIY job yourself. Several factors affect this cost, including local competition and the complexity of your system. Salt-free conditioners have only one tank and no drain line, so theyre easier to install and take less time to install than water softeners. This makes them generally cheaper to install than salt-based systems. Its recommended that a professional carry out installation for POE hard water treatment systems. Here are the average price ranges of what you can expect with standard installation: Cost FactorDescription Average Cost Range Plumber/HandymanSite preparation, installation of shut off valves and connectors, setting up drain line, connecting to power source and main water line$200 - $300 Equipment Tools and equipment needed for installation, including slip joint pliers and pipe cutter$80 - $100 SuppliesMaterials you need to buy separately, such as fittings, connectors, and tubing$50 - $100 Optional: Removal & DisposalRemoving and replacing old appliances legally, disposing installation debris and waste$100 - $200 Maintenance The type of technology can impact the initial as well as long-term maintenance costs of a water softener. Salt-based softeners and salt-free conditioners are similarly priced, but salt-based softeners are more expensive to operate in the long run. With a salt-based softener, youll need to pay for salt top-ups. While the cost of salt comes to less than $50 per year, its still $50 more than youll spend on a water conditioner. Cost Factor Average Cost Range Salt (ion exchange only)$20 - $40/40 lb. bag Potassium Chloride (ion exchange only)$40 - $80/40 lb. bag Resin $100 - $150 cu.ft. Water + Sewer (for ion exchange softeners) $20 - $30 ElectricityMinimal Cleaner $10 - $20 Rust Remover$5-$15 Water Treatment Repairs $200 - $1,000 Installing a water softening system is free if youre capable of doing the job yourself. Otherwise, you should prepare to factor in the cost of a professional to install your softener for you. You should be able to install a water softener yourself if youre used to doing odd jobs around the home, and youve preferably done a bit of plumbing work (plunging the toilet doesnt count, sadly). Check customer reviews to gauge how easy it is to install a system. Some manufacturers offer step-by-step videos, clear written instructions, and installation kits that are geared towards DIY installation. Salt-free water conditioners are typically easier to install than salt-based water softeners because they only use a single tank and dont need to be connected to a drain for the regeneration process. Magnetic treatment is the easiest to install because they sit on the outside of your water pipe. Getting a water softener installed by a professional is the better solution if you dont trust your ability to accurately cut into your plumbing system. The cost of professional installation for standard installation is about $200, depending on the competition in your local area. We personally test all the water softeners featured in our guides and reviews, so we know for certain how they live up to customer expectations in real life. There are tens of companies manufacturing water softeners today, including SpringWell, Whirlpool, SoftPro, Yarna, Fleck, AquaOx, US Water, and Crystal Quest to name just a few. Keep in mind that not all manufacturers products are worth your time. Weve researched and reviewed products by many manufacturers on the softening and conditioning market today, but a brands reputation is only one of the factors that we consider when determining which softeners are the best of the bunch. How a softener performs with everyday use is just as important as the trustworthiness of the manufacturer. Softpro Elite review Springwell Futuresoft review Springwell SS review Buying a water softener is a big deal. Youre spending more than you would on a vacation on a single system to improve your water quality, and you need to make sure the investment is worthwhile. Theres no denying the obvious benefits of water softeners, but not all softening systems are equal. Do your research before buying a softener, and be careful not to fall for marketing claims. Manufacturers want you to buy their product, so theyll try and convince you that their product is better than anyone elses. This isnt always true. Make bullet-point lists of a softeners features and compare it to other systems youre considering. Reading customer reviews will give you a good idea of how a softening system performs in reality. You can also read impartial reviews written by experts, like the reviews found on WaterFilterGuru. We have extensive information about the best water softening systems for all manner of uses and purposes. If you need to narrow your choices down to a top 5, were here to help. If you have hard water, you need a water softener. Some people think that only private wells with extremely hard water need a water softener, but this isnt true. There are a few obvious signs that your water supply contains hardness minerals: Clogged faucets and shower heads Water flows slowly through your plumbing Youve noticed scale on your faucets, coffee makers, and fixtures Your water-using appliances have a shorter lifespan than advertised You have dry skin and hair You need more soap than recommended in the manufacturers guidelines for cleaning purposes The only way to avoid these hard water problems is to install a whole-house water softener. If you still dont know whether your water contains calcium and magnesium, test your water with a hardness test kit. You can buy these kits for less than $10 on Amazon, and theyll tell you how hard your water is. From here, you can decide whether you could benefit from softening your homes water. Many water softeners can be installed by the homeowner but you have to be pretty competent at DIY to consider installing a softener yourself. There are lots of stages involved in installing a water softener, including cutting into your water line, installing the bypass valve (and checking that the bypass valve works), plumbing the tanks into your pipes, setting up the waste water line, and more. If youre confident in your DIY abilities, you should find it relatively easy to install a water softener, as long as you follow the user manual and instructions videos online. If youre not keen on DIY, youll be better off hiring a plumber to install your water softener for you. Most plumbers charge around $200 for standard water softener installation. A softener softens your water i.e. it removes minerals responsible for hard water while a water filter filters your water i.e. it removes dangerous contaminants that affect the taste and quality of water. Softeners are used to tackle aesthetic problems in your home, while water filters make your water safe to drink & taste better. You could consider installing a whole home reverse osmosis system, which can purify your water by removing total dissolved solids, removing hardness minerals in the process but we dont recommend it. For one thing, reverse osmosis is costly, both because it wastes water and because it requires multiple filter changes every year. For another, high hardness levels can damage a reverse osmosis membrane, shortening its lifespan. RO units arent designed to be used for water softening purposes, so wed advise sticking to softeners, descalers, and conditioners. It depends on your own personal preferences. Both systems offer similar water treatment benefits, but while a salt-based system physically removes calcium and magnesium ions from water, a salt-free water conditioner simply prevents mineral buildup in your pipes, water heater, and water-using appliances. If youre trying to choose between both systems, ask yourself the following questions: Would I rather reduce mineral buildup or remove the cause of hardness altogether? Do I want to add salt to my water, even if its only a small amount? Do I want to drink healthy hard minerals in my water, or am I not bothered about this additional mineral content? How bad are my hard water problems? Will a water conditioner suffice? Does my water contain iron? Do I need a salt-based system that can also remove this contaminant? Am I prepared for the maintenance involved with owning a salt-based system, and how the regeneration may affect my water bill? Ultimately, the decision is yours. Because both systems provide such similar results, and come at similar costs, we think theyre both viable solutions for hard water concerns. Enjoy sharper detail, more accurate color, lifelike lighting, believable backgrounds, and more with our new model update. Your generated images will be more polished thanever.See What's NewExplore how consumers want to see climate stories told today, and what that means for yourvisuals.Download Our Latest VisualGPS ReportData-backed trends. Generative AI demos. Answers to your usage rights questions. Our original video podcast covers it allnow ondemand.Watch NowEnjoy sharper detail, more accurate color, lifelike lighting, believable backgrounds, and more with our new model update. Your generated images will be more polished thanever.See What's NewExplore how consumers want to see climate stories told today, and what that means for yourvisuals.Download Our Latest VisualGPS ReportData-backed trends. Generative AI demos. Answers to your usage rights questions. Our original video podcast covers it allnow ondemand.Watch Now Please note: This item is not available for same day shipping. Use the chat feature or give us a call at 864-284-1801 for further information. Maintaining your water softener effectively provides your household with softened, mineral-free water. A key part of this maintenance is understanding the regeneration process, essential for restoring the water softeners ability to remove hardness minerals like calcium and magnesium. But how often should your water softener regenerate?This blog will cover the frequency of regeneration, the factors that influence it, common issues like salty water after regeneration, and how to troubleshoot problems.Whether setting up a new system or fine-tuning an existing one, understanding this process will ensure consistent water quality for your home. What Is Water Softener Regeneration?To start, lets clarify what regeneration is. Water softeners operate by removing hardness minerals through a process called ion exchange. The resin beads in the softener attract and trap these minerals, replacing them with sodium ions. Over time, these beads become saturated and can no longer effectively soften water. Regeneration flushes the resin with a brine solution, removing accumulated minerals and recharging the resin with sodium ions.This cycle typically consists of four stages:Backwash Phase: Water flows backward through the resin tank, dislodging any trapped debris.Brine Draw: A brine solution is introduced to recharge the resin beads.Rinse Cycle: Fresh water rinses the resin tank, removing leftover salt and minerals.Refill Phase: The brine tank refills with water for the next regeneration.Understanding this cycle is key to determining the ideal frequency for regeneration. Factors Influencing Regeneration FrequencyHow often your water softener regenerates depends on several factors, including the hardness of your water, the size of your household, and your water usage patterns. Lets break these down:Water Hardness LevelThe hardness of your water is one of the most significant factors. Measured in grains per gallon (GPG), harder water means the resin beads become saturated more quickly, requiring more frequent regeneration. For instance, water with a hardness level above 15 GPG may require regeneration every 23 days, while softer water might only need weekly regeneration.Household Water UsageThe more water your household uses, the faster the resin becomes saturated. For example, a family of four with moderate water usage will likely need regeneration more frequently than a single individual living alone.Resin Tank CapacityThe size of your water softeners resin tank directly impacts how often regeneration is needed. Larger tanks hold more resin beads and can process more hardness before requiring regeneration.Control Valve TypeWater softeners can regenerate based on time or demand. Time-initiated systems regenerate at fixed intervals, regardless of water usage. In contrast, demand-initiated systems track water usage and regenerate only when needed, making them more efficient.In general, most households will find that regenerating the softener every 57 days works well, but the specifics depend on the factors outlined above.On the Blog: Does Softened Water Have a Distinctive Taste? Common Issues: Salty Water After RegenerationA frequent complaint among water softener users is experiencing salty water after regeneration. If your water tastes salty after regeneration, here are some potential causes:Incomplete Rinse CycleDuring regeneration, if the rinse cycle is too short or improperly set, leftover brine can remain in the system, resulting in salty-tasting water.Clogged ComponentsOver time, components like the injector or brine line can become clogged with debris, preventing the system from fully flushing the brine solution.Water Usage During RegenerationUsing water while the system regenerates can cause brine to enter your homes water supply. This issue is more common with older or improperly programmed systems.Brine Tank OverfillingAn overfilled brine tank can lead to excessive salt being drawn into the regeneration cycle. Check your systems settings and ensure proper maintenance to avoid this.To prevent these issues, regularly clean your water softener, adjust the regeneration settings as needed, and schedule routine maintenance. Setting the Right Regeneration FrequencyDetermining the correct regeneration frequency for your water softener involves understanding your systems capacity and your households needs. Heres a step-by-step guide to setting an optimal schedule:Test Your Water Hardness: Use a testing kit to determine your waters hardness level in grains per gallon (GPG). Knowing this value is crucial for calculating the systems workload.Measure Daily Water Usage: Estimate how much water your household uses daily. For reference, the average person uses about 75100 gallons of water daily.Check Your Systems Capacity: Find out the grain capacity of your water softener. This information is typically in the user manual or manufacturers website.Calculate the Regeneration Interval: Divide your water softeners grain capacity by the daily grain removal (hardness level daily water usage). The result tells you how many days your system can go before needing regeneration.For example:Grain capacity: 30,000 grainsWater hardness: 10 GPGDaily water usage: 300 gallonsDaily grain removal = 10 GPG 300 = 3,000 grainsRegeneration interval = 30,000 3,000 = 10 daysWith this setup, your system would regenerate approximately every 10 days. Troubleshooting: Water Softener Stuck in Regeneration ModeAnother issue you may encounter is your water softener stuck in regeneration mode. This can disrupt water flow and reduce efficiency. Common causes include:Faulty TimerThe timer controls when the regeneration cycle starts and ends. A malfunctioning timer can prevent the system from advancing through its cycles.Clogged ValvesDirt or debris can clog the systems valves, hindering the regeneration process. Cleaning these components can resolve the issue.Motor ProblemsA damaged motor may fail to drive the valve assembly, keeping the system in regeneration mode.Software ErrorsSome modern water softeners feature digital controls. Software glitches can cause the system to freeze in regeneration mode. Resetting the system may solve the problem.If troubleshooting doesnt resolve the issue, consult your water softeners manual or contact a professional. How Often Should a Water Softener Regenerate?The frequency of water softener regeneration depends on factors like water hardness, household size, and system capacity. While a weekly regeneration cycle works for most homes, adjustments may be necessary based on your specific circumstances. Understanding the process and addressing issues like salty water after regeneration or stuck in regeneration mode will keep your system running smoothly. For expert advice, professional maintenance, or to upgrade your system, reach out to Nelson Water today. Ensure Superior Water Quality with Nelson WaterAt Nelson Water, were committed to helping you maintain high-quality water in your home. Whether you need assistance setting the optimal regeneration frequency, troubleshooting your water softener, or upgrading to a more efficient system, our experts are here to help. Contact us today to schedule a consultation and ensure your water treatment system operates at its best. Water softeners work quietly behind the scenes to keep your water free from hard mineralsbut how often should they regenerate to stay effective?Lets break it down with easy-to-follow tips, a frequency chart, and answers to the most common questions.What Is Water Softener Regeneration?Water softener regeneration is the process where the system flushes out hardness minerals (like calcium and magnesium) trapped in the resin bed using a salt brine solution.Without regular regeneration, your softener cant do its joband youll start to notice scale buildup, soap scum, and itchy skin.How Often Does a Water Softener Regenerate?In general, most water softeners regenerate:Every 2 to 3 days (time-based systems)Every 5001,500 gallons of water (demand-initiated systems)Quick Tip: If your water softener regenerates daily or less than once a week, it may need a setting adjustment or maintenance check.Water Softener Regeneration Frequency ChartHousehold SizeWater Hardness (GPG)Average Regeneration FrequencySystem Type12 People510 GPGEvery 68 daysTime-based34 People1015 GPGEvery 34 daysMetered (demand-initiated)5+ People1520+ GPGEvery 12 daysHigh-capacity or dual-tankVacation HomeVariesEvery 714 days (manual)Manual/low-use mode*GPG = Grains Per GallonAfter How Many Gallons Should a Water Softener Regenerate?The answer depends on your systems capacity and incoming water hardness. Most systems are rated to treat:15,000 to 45,000 grains of hardnessWhich equates to 5001,500 gallons of water between regenerationsA metered softener will automatically regenerate after its processed that limitmaking it more efficient for large households.Can You Regenerate a Water Softener Too Often?Yesover-regeneration wastes water, salt, and energy. It can also shorten the lifespan of components.Signs You Might Be Regenerating Too Often:System regenerates daily with no increase in water usageSalt levels drop unusually fastYour water still feels soft, but the system runs anywayIf this sounds like your system, check for:Incorrect hardness settingsMalfunctioning meter/timerSalt bridging or cloggingHow Often Should I Manually Regenerate My Water Softener?Most homeowners dont need to manually regenerate unless:The system didnt auto-run due to a power outageTheres been unusually high water usageYou notice a return of hard water symptomsIf needed, manually regenerate your softener once, then monitor performance.Water Softener Regeneration: Best PracticesChoose a demand-initiated (metered) system for efficiencyAdjust your settings if your water usage or hardness changesKeep salt tanks at least half full, and check for bridgingTest your water hardness every 612 monthsDont ignore signs of resin fatigue (reduced softening, discoloration)FAQsQ: What happens if my water softener doesnt regenerate? A: Youll notice hard water effectslike scale buildup, cloudy dishes, and stiff laundry. The system wont remove minerals until regeneration is complete.Q: Is it okay to regenerate my water softener at night? A: Yesmost softeners are programmed to regenerate in the early hours (23 AM) when water usage is lowest.Q: Should my water softener regenerate every day? A: No. Daily regeneration is usually a sign your settings need adjustingunless you have very hard water or a large household.Final TakeawayYour water softeners regeneration frequency depends on your households water use, system type, and hardness level. Aim for balancenot too often, not too rareto keep your water soft and your system running smoothly.Need Help Choosing or Adjusting Your Softener?Check out our full collection of PRO+AQUA Water Softener Systems or Replacement Media. ,the free encyclopedia that anyone can edit.107,766 active editors 7,028,964 articles in EnglishDick Cresswell (27July 1920 12December 2006) was an officer and pilot in the Royal Australian Air Force (RAAF). Born in Tasmania, he joined the RAAF in July1938. He commanded No.77 (Fighter) Squadron from April1942 to August1943, in Australia's North Western Area Campaign, against Japanese raiders. He claimed the squadron's first victorythe first by an Australian over the mainlandin November1942. He commanded No.81 (Fighter) Wing from May1944 to March1945, and simultaneously No.77 Squadron between September and December1944. In September1950, during the Korean War, he took command of No.77 Squadron for the third time. He oversaw its conversion to Gloster Meteors, becoming the first RAAF commander of a jet squadron in war, and earned the Commonwealth and US Distinguished Flying Crosses. Cresswell resigned from the RAAF in 1957, and flew with Bobby Gibbes's Sepik Airways in New Guinea before joining deHavilland Australia in 1959. He retired in 1974. (Fullarticle...)Recently featured: Liz TrussLesley J. McNairSecond Test, 1948 Ashes seriesArchiveBy emailMore featured articlesAboutDistrict No.13 School... that the Big Stone County Museum preserves a historic octagonal one-room schoolhouse (pictured)?... that operatic tenor Klaus Knig, who performed for more than 30 years, also worked as a house painter?... that Copford Place has been used as a prisoner of war camp and a retirement home for "gentlefolk"?... that Kamla Jaan, a hijra and mayor, was removed from office because the electoral rolls listed her as male?... that the author of the manga series Momo was inspired by the concept of girls wanting the world to be destroyed rather than face their problems?... that photographer Denis Cameron covered the Lebanese Civil War, the Iranian Revolution, the fall of the Berlin Wall, and the Gulf War?... that Walmart referred to a store at Muscatine Mall as their "Yankee store" because it was then their northernmost?... that George Mearns Savery was a pioneer of women's education in England?... that there was an attempt to make a ten-year-old English prince the king of Sicily? 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Parliament (d. 1747)Thomas Lawrence, American mayor (d. 1754)Anna Sophie Schack, Danish noblewoman (d. 1760)September 13 Johan Fredrik Peringskild, Swedish translator (d. 1725)September 17 Ferdinand Charles, comte d'Aspremont-Lynden, army general (d. 1772)September 18 Gabriel Malagrida, Italian missionary (d. 1761)September 21 Jan Klemens Branicki, Polish noble (d. 1771)September 22 Catharina Backer, painter from the Northern Netherlands (d. 1766)September 23 Antonio Denzio, Italian opera singer (d. 1763)September 24 Johann Adam Steinmetz, German pastor (d. 1762)September 26 Nij Yoshitada, Japanese noble (d. 1737)September 27 Edward Stanley, 11th Earl of Derby, English noble and politician (d. 1776)September 29 Henry Perrot, British Member of Parliament (d. 1740)September 30 Jacques Aubert, French composer and violinist (d. 1753)October 10 Francesco Maria Pratilli, Italian priest, antiquarian, famed for skilled forgeries (d. 1763)October 15 Nicolas-Ignace de Beaubois, French missionary (d. 1770)October 22King John V of Portugal, Portuguese king (d. 1750)Matthew Skinner, English serjeant-at-law, judge and politician (d. 1749)October 29 Tokugawa Yoshimichi, daimyo (d. 1713)October 31 Mildmay Fane, British politician (d. 1715)November 2Michael Cox, Anglican archbishop in Ireland (d. 1779)Charles-Franois Panard, French chansonnier and poet (d. 1765)Joan Paul Schaghen, Dutch governor (d. 1746)November 3Jan Josef Ignc Brentner, Czech composer (d. 1742)John Crowley, British Member of Parliament (d. 1728)November 4 Lus Carlos Incio Xavier de Meneses, 1st Marquis of Lourial, Portuguese nobleman and statesman (d. 1742)November 6Reynolds Calthorpe, politician (d. 1714)Christoph Schtz, German theologian (d. 1750)November 8 Henry XXXV, Prince of Schwarzburg-Sondershausen (d. 1758)November 17 Jean Franois Foppens, Flemish historian (d. 1761)November 21 Jacques I, Prince of Monaco, Prince consort of Monaco (d. 1751)November 29 Johann Theodor Eller, German chemist and physician (d. 1760)November 30Lars Gathenhielm, Swedish privateer (d. 1718)Joseph Wamps, French painter (d. 1744)December 1 Hieronymus Albrecht Hass, harpsichord maker (d. 1752)December 4 Gottfried Lengnich, historian and politician (d. 1774)December 8 Albert Wolfgang of Brandenburg-Bayreuth, Titular margrave of Brandenburg, imperial general (d. 1734)December 11 Ignatius van der Beken, Flemish painter (d. 1774)December 14 Agostino Veracini, Italian painter (d. 1762)December 21 Arthur Ingram, 6th Viscount of Irvine, British peer and politician (d. 1736)December 23 Joseph Bodin de Boismortier, French composer (d. 1755)December 24 Frans van Mieris the Younger, Dutch painter (d. 1763)December 27 Jacob August Franckenstein, Encyclopedia editor, professor (d. 1733)Seth Ward (bishop of Salisbury) died 6 JanuaryMarie Louise d'Orlans died 12 FebruarySambhaji died 11 MarchKazimierz yszczyski died 30 MarchArchduchess Maria Anna Josepha of Austria died 4 AprilLorenzo Onofrio Colonna died 14 AprilAphra Behn died 16 AprilChristina, Queen of Sweden died 19 AprilConyers Darcy, 1st Earl of Holderness died 14 JuneSong Si-yeol died 19 JulyPope Innocent XI died 12 AugustJohn Lake (bishop) died 30 AugustJane Lane, Lady Fisher died 9 SeptemberGeorge Ent died 13 OctoberStephan Farffler died 24 OctoberThomas Sydenham died 29 DecemberJanuary 6Cristoforo Ivanovich, Venetian historian and librettist of Serb origin (b. 1628)Bishop Seth Ward, Bishop of Salisbury, mathematician and astronomer (b. 1617)January 9 Sir Hugh Cholmeley, 4th Baronet, English politician (b. 1632)January 16 Gilbert Holles, 3rd Earl of Clare, English politician (b. 1633)January 18Ernest Gnther I, Duke of Schleswig-Holstein-Sonderburg-Augustenburg (b. 1609)Humphrey Lloyd, British bishop (b. 1610)January 24 Henry Waldegrave, 1st Baron Waldegrave, English peer and Jacobite supporter (b. 1661)January 27Robert Aske, merchant & haberdasher in the City of London (b. 1619)Sir Henry Beaumont, 2nd Baronet, English politician (b. 1638)Thomas Colepeper, 2nd Baron Colepeper, English noble and colonial governor of Virginia (b. 1635)January 28 Bernardino Corniani, Roman Catholic prelate, Bishop of Pula (b. 1626)January 29 Maria van Cortlandt van Rensselaer, Dutch director of Rensselaerswyck (Albany, New York) (b. 1645)January 31 Manuel de Herrera, Roman Catholic prelate, Bishop of Durango (b. 1635)February 1 Sir John Borlase, 2nd Baronet, English politician (b. 1642)February 4 Moshe ben Yonatan Galante, Ottoman rabbi (b. 1621)February 5 William Coddington Jr., Rhode Island colonial governor (b. 1651)February 6 Metcalfe Robinson, English politician (b. 1629)February 8 Sir John Gell, 2nd Baronet, English politician (b. 1613)February 12 Marie Louise d'Orlans, Queen of Spain as the wife of King Charles II (b. 1662)February 13 Carlo Pio di Savoia, Italian Catholic cardinal (b. 1622)February 18 Alexander Farnese, Prince of Parma, Spanish politician and military personnel (b. 1635)February 19 Khushal Khattak, Afghan poet (b. 1613)February 21 Isaac Vossius, Dutch classical scholar (b. 1618)February 22 Willem Ogier, Flemish playwright (b. 1618)February 24 Elsa Elisabeth Brahe, Swedish countess and duchess (b. 1632)February 28 Thomas Benedict, American settler (b. 1617)March 7 Franz Johann von Vogt von Altensumerau und Prasberg, Bishop of Constance (b. 1611)March 8 Alexander Parker, British minister (b. 1628)March 9 Franois Adhmar de Monteil, French priest, Bishop of Saint-Paul-Trois-Chteaux (b. 1603)March 10 Philip Louis, Duke of Schleswig-Holstein-Sonderburg-Wiesenburg (b. 1620)March 11Kim Ik-hun, Korean General and philosopher, soldier, politician (b. 1619)Sambhaji, High Protector of the Maratha Empire (b. 1657)March 14 Anthony Coucheron, Norwegian engineer (b. 1650)March 15 Yolo, Qing dynasty prince (b. 1625)March 18 John Dixwell, regicide (b. 1607)March 24Thomas Ballard, American politician (b. 1630)Michiel ten Hove, Grand Pensionary of Holland (b. 1640)March 26 Gabriel Milan, Governor of the Danish West Indies (b. 1631)March 29 Sir John Hotham, 2nd Baronet, Member of the House of Commons of England (b. 1632)March 30 Kazimierz yszczyski, Polish philosopher (b. 1634)March 31 Tommaso Caracciolo, Bishop of Gerace (b. 1640)April 4 Archduchess Maria Anna Josepha of Austria, youngest surviving daughter of Ferdinand III (b. 1654)April 12 John Hunting, first ruling elder of the church of Dedham, Massachusetts (b. 1602)April 14 Lorenzo Onofrio Colonna, Italian noble (b. 1637)April 16 Aphra Behn, British playwright, poet and spy (b. 1640)April 18 George Jeffreys, 1st Baron Jeffreys, Welsh judge, aka the Hanging Judge (b. 1645)April 19 Christina, Queen of Sweden, ruled from 1632 until abdication in 1654 (b. 1626)April 22 Thomas Proby, English politician (b. 1632)May 11 Charles Goodall, English poet (b. 1671)May 12 Sir John Reresby, 2nd Baronet, English politician and diarist (b. 1634)May 15 Jean Paul Mdaille, French Jesuit missionary (b. 1618)May 20 Estevo Brioso de Figueiredo, Roman Catholic prelate, Bishop of Funchal of Olinda (b. 1630)May 23 Charles Erskine, Earl of Mar, Scottish noble (b. 1650)May 25 Charles Errard, French painter (b. 1606)June 4 Ren Gaultier de Varennes, New France governor (b. 1635)June 7 Alphonse de Berghes, Roman Catholic archbishop (b. 1624)June 8 Decio Azzolino, Italian Catholic cardinal (b. 1623)June 9 Franois Bonnemer, French painter and engraver (b. 1638)June 10 Christophe Veyrier, sculptor (b. 1637)June 13 William Annand, Minister of the Church of Scotland and the Church of England (b. 1633)June 14 Conyers Darcy, 1st Earl of Holderness, English noble (b. 1598)June 17Jan Baptist de Crpu, Flemish painter and army officer (b. 1631)Marcin Zamoyski, Polish noble (b. 1637)June 20Willem Coucheron, Dutch general in the Dano-Norwegian army (b. 1600)Richard Sherlock, English Anglican priest (b. 1612)June 21 Thomas Blanchet, French painter (b. 1614)June 25 William Thomas, Welsh Anglican bishop (b. 1613)June 27 Richard Waldron, colonial settler, acting President of the Province of New Hampshire (b. 1615)June 28 Thomas Mainwaring, English politician (b. 1623)July 1 Anne Crawford-Lindsay, Scottish nobility (b. 1631)July 2 Edward Villiers, 1st Duke of Buckingham (b. 1620)July 7 Princess Louise of Savoy, Hereditary Princess of Baden-Baden (b. 1627)July 8Menahem Mendel Auerbach, Austrian banker and rabbi (b. 1620)Edward Wooster, English Connecticut pioneer (b. 1622)July 19 Song Si-yeol, Korean philosopher (b. 1607)July 23 Frederick Wilhelm von Pfalz-Neuburg, German noble (b. 1665)July 27 John Graham, 1st Viscount Dundee, Scottish general (b. 1648)August 6 Princess Dorothea Sophie of Schleswig-Holstein-Sonderburg-Glcksburg, Electress of Brandenburg (b. 1636)August 9 Dionisio Lazzari, Italian sculptor and architect (b. 1617)August 12 Pope Innocent XI, pope of the Catholic Church (b. 1611)August 13 Count Maximilian I, Prince of Hohenzollern-Sigmaringen, Count of Hohenzollern-Sigmaringen (b. 1636)August 15 John Gregory, Connecticut settler (b. 1612)August 17William Boynton, English politician (b. 1641)Thomas Street, astronomer (b. 1621)August 20 Antonio Marinari, Roman Catholic prelate, Auxiliary Bishop of Ostia-Velletri, Titular Bishop of Thagaste (b. 1605)August 21 William Cleland, Scottish poet and soldier (b. c. 1661)August 28Claude-Jean Allouez, French Jesuit missionary and explorer of North America (b. 1622)Alexander Coosemans, Flemish still life painter (b. 1627)August 29 Curwen Rawlinson, English politician (b. 1641)August 30 John Lake, English bishop (b. 1624)September 6 Torii Tadanori, Daimyo who ruled the Takat Domain in Shinano Province (b. 1646)September 9 Jane Lane, Lady Fisher, English Royalist (b. 1626)September 10 John Belasyse, 1st Baron Belasyse, English politician and noble (b. 1614)September 13 Ciro Ferri, Italian painter, engraver, sculptor and architect (b. 1634)September 15Balthasar Cellarius, German theologian (b. 1614)Timolon Cheminais de Montaigu, French theologian (b. 1652)September 18 Sir Richard Head, 1st Baronet, English politician (b. 1600)September 26 August, Duke of Schleswig-Holstein-Sonderburg-Beck (b. 1652)September 30 Julius Francis, Duke of Saxe-Lauenburg, Bohemian noble (b. 1641)October 1 Alexander Voet the Elder, Flemish engraver (b. 1608)October 4 Quirinus Kuhlmann, German Baroque poet and mystic (b. 1651)October 11 Fyodor Shaklovity, Russian diplomat (b. 1640)October 13 George Ent, English scientist and physician; (b. 1604)October 14 Adolph John I, Count Palatine of Kleeburg, Swedish prince (b. 1629)October 15 Sir Edward Dering, 3rd Baronet, English politician (b. 1650)October 24 Stephan Farffler, German inventor (b. 1633)October 25 Joseph Maynard, English politician (b. 1639)October 30 Pier Antonio Capobianco, Roman Catholic prelate, Bishop of Lacedonia (b. 1619)November 9 Enea Silvio Piccolomini, imperial general (b. 1651)November 12 Justus de Verwer, Dutch painter and illustrator (b. 1625)November 13Matteo Borboni, Italian painter (b. 1610)Philipp von Zesen, German poet (b. 1619)November 16 Cornelis Mahu, Flemish painter (b. 1613)November 18 Jacob van der Ulft, painter from the Northern Netherlands (b. 1621)November 19 Elizabeth Cavendish, Countess of Devonshire, English noblewoman; (b. 1619)November 20 Samuel Peterson, American city founder (b. 1639)November 24 Carey Dillon, 5th Earl of Roscommon, Irish nobleman and professional soldier (b. 1627)November 26 Marquard Gude, German archaeologist (b. 1635)December 2 George Speke, English politician (b. 1623)December 6 Pjetr Bogdani, Albanian priest and writer (b. c. 1630)December 12 Louis Ferdinand Elle the Elder, French painter (b. 1612)December 15 Anne Neville, abbess of Pontoise (b. 1605)December 16Cornelis Geelvinck, Dutch mayor (b. 1621)Thomas Wyndham, English Member of Parliament (b. 1640)December 25 Oliver Montagu, English Member of Parliament (b. 1655)December 27 Gervase Bryan, English clergyman (b. 1622)December 28 Pietro Montanini, Italian painter (b. 1626)December 29Olfert Dapper, Dutch physician and writer (b. 1636)George Kinnaird, 1st Lord Kinnaird, Scottish aristocrat (b. 1622)Franoise Bertaut de Motteville, French writer (b. 1621)Thomas Sydenham, English physician (b. 1624)December 31Felipe Fernandez de Pardo, Roman Catholic prelate, Archbishop of Manila (b. 1611)Gilbert de Choiseul Duplessis Praslin, Roman Catholic bishop (b. 1613)Anders Sinclair, Scottish soldier who joined Swedish service during the Thirty Years' War (b. 1614)^ a b Kenyon, J. P. (1978). Stuart England. Harmondsworth: Penguin Books. ISBN0-14-022076-3.^ Oxford DNB odnb/9780198614128.001.0001/odnb-9780198614128-e-16885?rskey=mOcb4B&result=4^ Miller, John (2000). James II. Yale English monarchs (3rded.). New Haven: Yale University Press. pp.222227. ISBN0-300-08728-4.^ "Total Eclipse of the Moon: 1689 April 04". astro.ukho.gov.uk. Retrieved October 27, 2022.^ Penguin Pocket On This Day. Penguin Reference Library. 2006. ISBN0-14-102715-0.^ "The Siege of Derry in Ulster Protestant mythology". Cruithni. December 31, 2001. Retrieved July 16, 2012.^ Lynn, John A. (1999). The Wars of Louis XIV, 16671714. Harlow: Longman. p.203. ISBN0-582-05629-2. Retrieved October 27, 2022.^ Historic Environment Scotland. "Battle of Killiecrankie(BTL12)". Retrieved June 19, 2020.^ "Parades and Marches - Chronology 2: Historical Dates and Events". Conflict Archive on the Internet (CAIN). Retrieved January 28, 2010.^ Historic Environment Scotland. "Battle of Dunkeld(BTL32)". 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Retrieved October 27, 2022.^ Webster, Noah (September 2008). A brief history of epidemic and pestilential diseases; with the principal phenomena of the physical world, which precede and accompany them, and observations deduced from the facts stated. Vol.I. Retrieved October 27, 2022. Media related to 1689 at Wikimedia CommonsRetrieved from "3SuMoTuWeThFrSa0102030405060708091011121314151617181920212223242526272829303102 5July 19 in recent years2025 (Saturday)2024 (Friday)2023 (Wednesday)2022 (Tuesday)2021 (Monday)2020 (Sunday)2019 (Friday)2018 (Thursday)2017 (Wednesday)2016 (Tuesday)Day of the yearJuly 19 is the 200th day of the year (201st in leap years) in the Gregorian calendar; 165 days remain until the end of the year.64 The Great Fire of Rome causes widespread devastation and rages on for six days, destroying half of the city.[1]484 Leontius, Roman usurper, is crowned Eastern emperor at Tarsus (modern Turkey). He is recognized in Antioch and makes it his capital.711 Umayyad conquest of Hispania: Battle of Guadalete: Umayyad forces under Tariq ibn Ziyad defeat the Visigoths led by King Roderic.939 Battle of Simancas: King Ramiro II of Len defeats the Moorish army under Caliph Abd-al-Rahman III near the city of Simancas.998 ArabByzantine wars: Battle of Apamea: Fatimids defeat a Byzantine army near Apamea.1333 Wars of Scottish Independence: Battle of Halidon Hill: The English win a decisive victory over the Scots.1544 Italian War of 154246: The first Siege of Boulogne begins.1545 The Tudor warship Mary Rose sinks off Portsmouth; in 1982 the wreck is salvaged in one of the most complex and expensive projects in the history of maritime archaeology.1553 The attempt to install Lady Jane Grey as Queen of England collapses after only nine days.1588 Anglo-Spanish War: Battle of Gravelines: The Spanish Armada is sighted in the English Channel.1701 Representatives of the Iroquois Confederacy sign the Nanfan Treaty, ceding a large territory north of the Ohio River to England.1702 Great Northern War: A numerically superior Polish-Saxon army of Augustus II the Strong, operating from an advantageous defensive position, is defeated by a Swedish army half its size under the command of King Charles XII in the Battle of Klissow.1817 Unsuccessful in his attempt to conquer the Kingdom of Hawaii for the Russian-American Company, Georg Anton Schffer is forced to admit defeat and leave Kauai.1821 Coronation of George IV of the United Kingdom.1832 The British Medical Association is founded as the Provincial Medical and Surgical Association by Sir Charles Hastings at a meeting in the Board Room of the Worcester Infirmary.1843 Brunel's steamship the SSGreat Britain is launched, becoming the first ocean-going craft with an iron hull and screw propeller, becoming the largest vessel afloat in the world.1845 Great New York City Fire of 1845: The last great fire to affect Manhattan begins early in the morning and is subdued that afternoon. The fire kills four firefighters and 26 civilians and destroys 345 buildings.1848 Women's rights: A two-day Women's Rights Convention opens in Seneca Falls, New York.1863 American Civil War: Morgan's Raid: At Buffington Island in Ohio, Confederate General John Hunt Morgan's raid into the north is mostly thwarted when a large group of his men are captured while trying to escape across the Ohio River.1864 Taiping Rebellion: Third Battle of Nanking: The Qing dynasty finally defeats the Taiping Heavenly Kingdom.1870 Franco-Prussian War: France declares war on Prussia.1900 The first line of the Paris Mtro opens for operation.1903 Maurice Garin wins the first Tour de France.[2]1916 World War I: Battle of Fromelles: British and Australian troops attack German trenches as part of the Battle of the Somme.1934 The rigid airship USSMacon surprised the USSHouston near Clipperton Island with a mail delivery for President Franklin D. Roosevelt, demonstrating its potential for tracking ships at sea.[3]1936 Spanish Civil War: The CNT and UGT call a general strike in Spain mobilizing workers' militias against the Nationalist forces. People's Olympiad of Barcelona cancelled.[4]1940 World War II: Battle of Cape Spada: The Royal Navy and the Regia Marina clash; the Italian light cruiser Bartolomeo Colleoni sinks, with 121 casualties.1940 Field Marshal Ceremony: First occasion in World War II that Adolf Hitler appoints field marshals due to military achievements.1940 World War II: Army order 112 forms the Intelligence Corps of the British Army.1942 World War II: The Second Happy Time of Hitler's submarines comes to an end, as the increasingly effective American convoy system compels them to return to the central Atlantic.1943 World War II: Rome is heavily bombed by more than 500 Allied aircraft, inflicting thousands of casualties.1947 Prime Minister of the shadow Burmese government, Bogyoke Aung San and eight others are assassinated.1947 Korean politician Lyuh Woon-hyung is assassinated.1952 Opening of the Summer Olympics in Helsinki, Finland.[5]1957 The largely autobiographical novel The Ordeal of Gilbert Pinfold by Evelyn Waugh was published.[6]1961 Tunisia imposes a blockade on the French naval base at Bizerte; the French would capture the entire town four days later.1963 Joe Walker flies a North American X-15 to a record altitude of 106,010 meters (347,800 feet) on X-15 Flight 90. Exceeding an altitude of 100km, this flight qualifies as a human spaceflight under international convention.1964 Vietnam War: At a rally in Saigon, South Vietnamese Prime Minister Nguyn Khnh calls for expanding the war into North Vietnam.1967 Piedmont Airlines Flight 22, a Piedmont Airlines Boeing 727-22 and a twin-engine Cessna 310 collided over Hendersonville, North Carolina, USA. Both aircraft were destroyed and all passengers and crew were killed, including John T. McNaughton, an advisor to Robert McNamara.[7]1969 Chappaquiddick incident: U.S. Senator Ted Kennedy crashes his car into a tidal pond at Chappaquiddick Island, Massachusetts, killing his passenger Mary Jo Kopechne.[8]1972 Dhofar Rebellion: British SAS units help the Omani government against Popular Front for the Liberation of Oman rebels in the Battle of Mirbat.1976 Sagarmatha National Park in Nepal is created.1977 The world's first Global Positioning System (GPS) signal was transmitted from Navigation Technology Satellite 2 (NTS-2) and received at Rockwell Collins in Cedar Rapids, Iowa, at 12:41a.m. Eastern time (ET).[9]1979 The Sandinista rebels overthrow the government of the Somoza family in Nicaragua.1979 The oil tanker SS Atlantic Empress collides with another oil tanker, causing the largest ever ship-borne oil spill.1980 Opening of the Summer Olympics in Moscow.[10]1981 In a private meeting with U.S. President Ronald Reagan, French President Franois Mitterrand reveals the existence of the Farewell Dossier, a collection of documents showing the Soviet Union had been stealing American technological research and development.1982 In one of the first militant attacks by Hezbollah, David S. Dodge, president of the American University of Beirut, is kidnapped.[11]1983 The first three-dimensional reconstruction of a human head in a CT is published.1985 The Val di Stava dam collapses killing 268 people in Val di Stava, Italy.1989 United Airlines Flight 232 crashes in Sioux City, Iowa, killing 111.1992 A car bomb kills Judge Paolo Borsellino and five members of his escort.1997 The Troubles: The Provisional Irish Republican Army resumes a ceasefire to end their 25-year paramilitary campaign to end British rule in Northern Ireland.2011 Guinean President Alpha Cond survives an attempted assassination and coup d'tat at his residence in Conakry.[12]2012 Syrian civil war: The People's Protection Units (YPG) capture the city of Koban without resistance, starting the Rojava conflict in Northeast Syria.[13]2014 Gunmen in Egypt's western desert province of New Valley Governorate attack a military checkpoint, killing at least 21 soldiers. Egypt reportedly declares a state of emergency on its border with Sudan.2018 The Knesset passes the controversial Nationality Bill, which defines the State of Israel as the nation-state of the Jewish people.[14]2024 A faulty software update by CrowdStrike, an American cybersecurity company, causes global computer outages.[15]2024 The International Court of Justice (ICJ) delivered a ruling stating that Israel should end its illegal occupation of the Palestinian territories. The ICJ identified that all member states of the UN are under an obligation not to recognize the occupation as legal nor "render aid or assistance" toward maintaining Israel's presence in the occupied territories.[16][17]2025 The tourist boat Wonder Sea capsizes during a thunderstorm in H Long Bay, Vietnam, leaving at least 36 people dead.[18]810 Muhammad al-Bukhari, Persian scholar (died 870)1223 Baibars, sultan of Egypt (died 1277)1420 William VIII, Marquis of Montferrat (died 1483)1569 Conrad Vorstius, Dutch theologian (died 1622)1670 Richard Leveridge, English singer-songwriter (died 1758)1688 Giuseppe Castiglione, Italian missionary and painter (died 1766)1744 Heinrich Christian Boie, German author and poet (died 1806)1759 Marianna Auenbrugger, Austrian pianist and composer (died 1782)1759 Seraphim of Sarov, Russian monk and saint (died 1833)1771 Thomas Talbot, Irish-Canadian colonel and politician (died 1853)1794 Jos Justo Corro, Mexican politician and president (died 1864)[19]1789 John Martin, English painter, engraver, and illustrator (died 1854)1800 Juan Jos Flores, Venezuelan general and politician, 1st President of Ecuador (died 1864)1814 Samuel Colt, American businessman, founded the Colt's Manufacturing Company (died 1862)[20]1819 Gottfried Keller, Swiss author, poet, and playwright (died 1890)1822 Princess Augusta of Cambridge (died 1916)1827 Mangal Pandey, Indian soldier (died 1857)1834 Edgar Degas, French painter, sculptor, and illustrator (died 1917)1835 Justo Rufino Barrios, Guatemalan president (died 1885)1842 Frederic T. Greenhalge, English-American lawyer and politician, 38th Governor of Massachusetts (died 1896)1846 Edward Charles Pickering, American astronomer and physicist (died 1919)[21]1849 Ferdinand Brunetire, French scholar and critic (died 1906)1860 Lizzie Borden, American woman, tried and acquitted for the murders of her father and step-mother in 1892 (died 1927)1864 Fiammetta Wilson, English astronomer (died 1920)[22]1865 Georges Friedel, French mineralogist and crystallographer (died 1933)1865 Charles Horace Mayo, American surgeon, co-founder of the Mayo Clinic (died 1939)1868 Florence Foster Jenkins, American soprano and educator (died 1944)1869 Xenophon Stratigos, Greek general and politician, Greek Minister of Transport (died 1927)1875 Alice Dunbar Nelson, American poet and activist (died 1935)1876 Joseph Fielding Smith, American religious leader, 10th President of The Church of Jesus Christ of Latter-day Saints (died 1972)1877 Arthur Fielder, English cricketer (died 1949)1881 Friedrich Dessauer, German physicist and philosopher (died 1963)1883 Max Fleischer, Austrian-American animator and producer (died 1972)1884 Charles Edward, Duke of Saxe-Coburg and Gotha, British-born German nobleman and Nazi politician (died 1954)[23]1886 Michael Fekete, Hungarian-Israeli mathematician and academic (died 1957)1888 Enno Lolling, German physician (died 1945)1890 George II of Greece (died 1947)1892 Dick Irvin, Canadian ice hockey player and coach (died 1957)1893 Vladimir Mayakovsky, Russian actor, playwright, and poet (died 1930)1894 Aleksandr Khinchin, Russian mathematician and academic (died 1959)1894 Khawaja Nazimuddin, Bangladeshi-Pakistani politician, 2nd Prime Minister of Pakistan (died 1965)1894 Percy Spencer, American physicist and inventor of the microwave oven (died 1969)1895 Xu Beihong, Chinese painter and academic (died 1953)1896 Reginald Baker, English film producer (died 1985)1896 A. J. Cronin, Scottish physician and novelist (died 1981)1896 Bob Meusel, American baseball player and sailor (died 1977)1898 Herbert Marcuse, German-American sociologist and philosopher (died 1979)1899 Balai Chand Mukhopadhyay, Indian physician, author, poet, and playwright (died 1979)1902 Samudrala Sr., Indian singer, director, producer, and screenwriter (died 1968)1904 Robert Todd Lincoln Beckwith, American lawyer and farmer (died 1985)1907 Isabel Jewell, American actress (died 1972)1908 Daniel Fry, American contactee (died 1992)1908 Hans Trippel, German engineer, developed Amphicar (died 2001)[24]1909 Balamani Amma, Indian poet and author (died 2004)1912 Peter Leo Gerety, American prelate (died 2016)1913 Kay Linaker, American actress and screenwriter (died 2008)1914 Marius Russo, American baseball player (died 2005)1915 ke Hellman, Finnish painter (died 2017)1916 Phil Cavarretta, American baseball player and manager (died 2010)1917 William Scranton, American captain and politician, 13th United States Ambassador to the United Nations (died 2013)1919 Patricia Medina, English-American actress (died 2012)1919 Miltos Sachtouris, Greek poet and author (died 2005)1919 Ron Searle, English-Canadian soldier, publisher, and politician, 4th Mayor of Mississauga (died 2015)1920 Robert Mann, American violinist, composer, and conductor (died 2018)1920 Richard Oriani, Salvadoran-American metallurgist and engineer (died 2015)1921 Harold Camping, American evangelist, author, radio host (died 2013)1921 Andr Moynet, French soldier, race car driver, and politician (died 1993)1921 Elizabeth Spencer, American novelist, short story writer, and playwright (died 2019)1921 Rosalyn Sussman Yalow, American physicist and academic, Nobel Prize laureate (died 2011)1922 George McGovern, American lieutenant, historian, and politician (died 2012)1922 Rachel Robinson, American professor, registered nurse, and the widow of baseball player Jackie Robinson1923 Theo Barker, English historian (died 2001)1923 Alex Hannum, American basketball player and coach (died 2002)[25]1923 Joseph Hansen, American author and poet (died 2004)1923 William A. Rusher, American lawyer and journalist (died 2011)1923 Lon Simmons, American baseball player and sportscaster (died 2015)1924 Stanley K. Hathaway, American soldier, lawyer, and politician, 40th United States Secretary of the Interior (died 2005)1924 Pat Hingle, American actor and producer (died 2009)1924 Arthur Rankin Jr., American director, producer, and screenwriter (died 2014)1925 Sue Thompson, American singer (died 2021)1926 Helen Gallagher, American actress, singer, and dancer (died 2024)[26]1928 Samuel John Hazo, American author1928 Choi Yun-chil, South Korean long-distance runner[27] and a two-time national champion in the marathon[28] (died 2020)1929 Gaston Glock, Austrian engineer and businessman, co-founded Glock Ges.m.b.H. (died 2023)1929 Orville Turnquest, Bahamian politician1932 Buster Benton, American singer-songwriter and guitarist (died 1996)1932 Jan Lindblad, Swedish biologist and photographer (died 1987)1934 Francisco de S Carneiro, Portuguese lawyer and politician, 111th Prime Minister of Portugal (died 1980)1935 Nick Koback, American baseball player and golfer (died 2015)1936 David Colquhoun, English pharmacologist and academic1937 George Hamilton IV, American singer-songwriter and guitarist (died 2014)1937 Richard Jordan, American actor (died 1993)1938 Jayant Narlikar, Indian astrophysicist and astronomer (died 2025)1938 Tom Raworth, English poet and academic (died 2017)1941 Vikki Carr, American singer and actress1941 Neelie Kroes, Dutch politician and diplomat, European Commissioner for Digital Economy and Society1943 Han Sai Por, Singaporean sculptor and academic1943 Carla Mazzuca Poggiolini, Italian journalist and politician[29]1944 Tim McIntire, American actor and singer (died 1986)1944 Andres Vooremaa, Estonian chess player (died 2022)1945 Paule Baillargeon, Canadian actress, director, and screenwriter1946 Alan Gorrie, Scottish singer-songwriter and musician1946 Ilie Nstase, Romanian tennis player and politician1947 Andr Forcier, Canadian director and screenwriter1947 Hans-Jrgen Kreische, German footballer and manager1947 Bernie Leadon, American guitarist and songwriter1947 Brian May, English singer-songwriter, guitarist, producer, and astrophysicist1948 Keith Godchaux, American keyboard player and songwriter (died 1980)1949 Kgalema Motlanthe, South African politician, 3rd President of South Africa1950 Per-Kristian Foss, Norwegian politician, Norwegian Minister of Finance1950 Freddy Moore, American singer-songwriter and guitarist (died 2022)1950 Adrian Noble, English director and screenwriter1951 Abel Ferrara, American director, producer, and screenwriter1952 Allen Collins, American guitarist and songwriter (died 1990)1952 Jayne Anne Phillips American novelist and short story writer1953 Howard Schultz, American businessman and author[30]1954 Mark O'Donnell, American playwright (died 2012)1954 Steve O'Donnell, American screenwriter and producer1954 Sra Trifkovi, Serbian-American journalist and historian1955 Roger Binny, Indian cricketer and sportscaster1955 Dalton McGuinty, Canadian lawyer and politician, 24th Premier of Ontario1956 Mark Crispin, American computer scientist, designed the IMAP (died 2012)1958 Brad Drewett, Australian tennis player and sportscaster (died 2013)1958 Robert Gibson, American wrestler1958 David Robertson, American conductor1959 Juan J. Campanella, Argentinian director, producer, and screenwriter1960 Atom Egoyan, Egyptian-Canadian director, producer, and screenwriter1960 Kevin Haskins, English drummer and songwriter1961 Harsha Bhogle, Indian journalist and author1961 Maria Filatova, Russian gymnast1961 Lisa Lampanelli, American comedian, actress, and author1961 Benot Mariage, Belgian director and screenwriter1961 Hideo Nakata, Japanese director, producer, and screenwriter1961 Campbell Scott, American actor, director, and producer1962 Anthony Edwards, American actor and director1963 Thomas Gabriel Fischer, Swiss musician1963 Garth Nix, Australian author1964 Teresa Edwards, American basketball player[31]1964 Masahiko Kond, Japanese singer-songwriter and race car driver1965 Evelyn Glennie, Scottish musician1965 Claus-Dieter Wollitz, German footballer and manager1967 Yael Abecassis, Israeli model and actress1967 Jean-Franois Mercier, Canadian comedian, screenwriter, and television host1968 Robb Flynn, American singer-songwriter, guitarist, and producer1968 Pavel Kuka, Czech footballer and manager1968 Jim Norton, American comedian, actor, and author1969 Matthew Libatique, American cinematographer1970 Bill Chen, American poker player and software designer1970 Christopher Luxon, New Zealand politician, 42nd Prime Minister of New Zealand[32]1970 Nicola Sturgeon, Scottish lawyer and politician, First Minister of Scotland[33]1971 Rene Busch, Estonian tennis player and coach1971 Vitali Klitschko, Ukrainian boxer and politician, Mayor of Kyiv1971 Michael Modest, American wrestler1971 Catriona Rowntree, Australian television host1971 Lesroy Weekes, Montserratian cricketer1972 Ebbe Sand, Danish footballer and manager1973 Martin Powell, English keyboard player and songwriter1973 Scott Walker, Canadian ice hockey player and coach1974 Rey Bucanero, Mexican wrestler1974 Francisco Copado, German footballer and manager1974 Jose Pich, Canadian ice dancer1974 Vince Spadea, American tennis player1974 Preston Wilson, American baseball player and sportscaster1975 Luca Castellazzi, Italian footballer1976 Benedict Cumberbatch, English actor[34]1976 Gonzalo de los Santos, Uruguayan footballer and manager1977 Jean-Sbastien Aubin, Canadian ice hockey player1977 Tony Mamaluke, American wrestler and manager1977 Ed Smith, English cricketer and journalist1979 Rick Ankiel, American baseball player1979 Josu Anunciado de Oliveira, Brazilian footballer1979 Dilhara Fernando, Sri Lankan cricketer1979 Luke Young, English footballer1980 Xavier Malisse, Belgian tennis player1980 Giorgio Mondini, Italian race car driver1980 Chris Sullivan, American actor[35]1981 Nen, Brazilian footballer1981 David Bernard, Jamaican cricketer1981 Mark Gasnier, Australian rugby player and sportscaster1981 Jimmy Gobble, American baseball player1981 Grgory Vignal, French footballer1982 Christopher Bear, American drummer1982 Phil Coke, American baseball player1982 Jared Padalecki, American actor1982 Jess Vanstrattan, Australian footballer1983 Helen Skelton, English television host and actress1983 Fedor Tyutin, Russian ice hockey player1984 Andrea Libman, Canadian voice actress1984 Adam Morrison, American basketball player1984 Ryan O'Byrne, Canadian ice hockey player1984 Lewis Price, Welsh footballer1985 LaMarcus Aldridge, American basketball player1985 Zhou Haibin, Chinese footballer1985 Marina Kuzina, Russian basketball player1985 Hadi Norouzi, Iranian footballer (died 2015)1986 Leandro Greco, Italian footballer1986 Jinder Mahal, Canadian wrestler[36]1987 Yan Gomes, Brazilian-American baseball player[37]1987 Jon Jones, American mixed martial artist1987 Marc Murphy, Australian footballer1988 Shane Dawson, American comedian and actor1988 Kevin Grokreutz, German footballer1988 Jakub Kov, Czech ice hockey player1988 Trent Williams, American football player[38]1989 Patrick Corbin, American baseball player[39]1989 Sam McKendry, Australian-New Zealand rugby league player1991 Eray can, Turkish footballer1992 Jake Nicholson, English footballer1994 Christian Welch, Australian rugby league player1996 Paul Momirovski, Australian rugby league player[40]1998 Erin Cuthbert, footballer[41]1998 Karl Jacobs, American YouTuber and streamer[42]1998 Ronaldo Vieira, Bissau-Guinean footballer1999 Kim So-hye, South Korean actress and singer[43]2003 Tyler Downs, American Olympic diver[44]514 Symmachus, pope of the Catholic Church806 Li Shigu, Chinese general (born 778)973 Kyunyeo, Korean monk and poet (born 917)998 Damian Dalassenos, Byzantine general (born 940)1030 Adalberon, French bishop

even when not needed.Can use more salt and water than necessary.On-demand or smart-metered systems:Monitor actual water use and regenerate only when required.Improve cost-efficiency and reduce salt and water waste.Always keep resin beads ready, adjusting to changes in water usage.For most families, on-demand water softeners offer the best mix of convenience and savings. You get reliably soft water without extra effort or wasted resources.How to Perform a Household Water AuditMany homeowners do not realize how much water they actually use each day. It can be surprising, some families use 500 gallons or more in a single day without even noticing. Completing a household water audit helps you understand your true usage and ensures your water softener is set up for success.Using Your Water Bill or MeterThe simplest way to track your water use is through your utility bill or water meter.Water Bill: Most bills list your total water usage for the month. To find your daily average, divide the total gallons used by the number of days in the billing period. Some providers even break down usage by activity, offering more insight into how water is spent around the house.Water Meter: If your bill does not offer enough detail, your water meter is a reliable backup. Take a reading at the same time two days in a row to see how much water your household uses over 24 hours. Repeat a few times for an accurate average.Manual Audit with Flow RatesIf you want a more hands-on approach, you can estimate water use fixture by fixture. This method gives you a deeper look at where your water is really going.Faucets: Collect water from a faucet for 10 seconds, measure the volume, and multiply by six to get gallons per minute.Toilets: Turn off the water supply, flush, then refill the tank with tap water using a measured container until it reaches the original water line. This gives you the volume per flush.Appliances: Use manufacturer specs to determine gallons per load or cycle.Track Usage: Count how many times you use each fixture or appliance in a typical day or week.Calculate Totals: Multiply the flow rate by the frequency of use for each source, then add everything up for daily and weekly totals.Why Knowing Your Usage MattersUnderstanding your daily water consumption is more than just an interesting number. It helps you:Set the ideal water softener regeneration timing so your system works efficientlyPrevent overuse of salt and avoid premature system wearMake sure your softener is sized and calibrated correctly for your familys needsSave money by reducing waste and extending the life of appliancesWith an accurate water audit, you can confidently adjust your water softener for the best performance, without any need for guesswork.Signs Your Water Softener Isnt Regenerating ProperlyAfter installing a water softener, it is important to make sure it is working as expected. If your system is not regenerating properly, you may notice some changes around your home. Paying attention to these signs helps you catch issues early and keeps your water softener delivering the benefits you expect.Loss of Soft Water BenefitsOne of the first clues is a loss of soft water quality. If you start seeing hard water stains on faucets and glassware, soap scum building up in sinks or showers, or your skin and hair feel drier after washing, your softener may not be regenerating as it should. Laundry might feel stiff or scratchy, and your dishes may not come out as clean as usual.Pressure Drops or Equipment IssuesAnother common signal is a noticeable drop in water pressure or strange noises from your system. If your water flow weakens or you hear the softener working more often than usual, these may be signs of a mechanical problem or a regeneration cycle that is not completing. In some cases, error messages or warning lights will show up on the unit itself.Cheap or poorly maintained softeners are more likely to experience these problems. That is why it is important to invest in a quality water softener from a trusted provider like Rayne Water, and to keep up with regular maintenance.Tips to Optimize Regeneration CyclesWant your water softener to run efficiently and deliver soft water consistently? Use these simple tips to keep your regeneration cycles on track:Use high-quality salt: Choose salt pellets or cubes specifically made for water softeners. High-purity salt helps prevent buildup and keeps your system working smoothly.Clean the brine tank regularly: Periodically empty and rinse out the brine tank to prevent salt bridges, sludge, or residue. Clean tanks help maintain consistent regeneration and extend the life of your softener.Schedule regeneration for nighttime: Set your softener to regenerate when water use is lowest, typically overnight. This avoids interruptions in water flow and ensures you always have soft water when you need it.Avoid overloading the system:Plan for heavy water usage, such as laundry day or extra guests. Try to spread out big water-consuming tasks, so the softener is not overwhelmed by sudden spikes in demand.Regular attention to these steps helps you get the most out of every regeneration cycle, reduce wear, and keep your water softener running efficiently for years.Work With a Professional: Rayne Water Has You CoveredGet the most from your water softener with expert help from Rayne Water. Their team guides you through installation, setup, and water audits, making sure your system is perfectly matched to your homes needs.If you ever have questions or need adjustments, Raynes specialists are ready to help. Check out our service locations and product options to get started.Trust Rayne for soft water solutions and support you can count on.Are You Getting the Most from Your Water Softener?Regeneration is the key to keeping your water softener effective. The right frequency depends on your homes water usage and hardness level. Understanding your water softener regeneration time ensures you always enjoy the benefits of soft water, without wasting salt or energy.If youre still unsure about water softener regeneration time or how often your system should regenerate, it often comes down to your household size, water usage, and the hardness level in your area. For personalized advice, its a good idea to consult a professional who can evaluate your setup and help you get the most out of your system.Have a question or need support? Reach out to Rayne Water for guidance you can trust.FAQs1. How often should my water softener regenerate? Water softener regeneration time depends on your homes water hardness and daily water usage. Most households see regeneration every 2 to 3 days, but high-usage homes might need daily cycles, while lower-use homes may only need regeneration once a week.2. How long does water softener regeneration take from start to finish? A complete regeneration cycle typically takes between 60 and 90 minutes. This includes all stages: backwash, brining, rinsing, and refilling the brine tank. For most systems, you can expect your water softener to regenerate in just over an hour.3. Can I change the water softener regeneration time or schedule? Many systems allow you to adjust the regeneration settings. You can set the system to regenerate overnight or during low-usage hours. On-demand or metered softeners automatically schedule regeneration based on actual water use, while timed systems follow a set schedule.4. What happens if my water softener does not regenerate enough? If regeneration is skipped too often, hard water minerals will build up in your plumbing and appliances. You may notice hard water stains, soap scum, or reduced water pressure. Keeping the right regeneration time helps your softener work efficiently and protects your home.5. How do I know how long it takes a water softener to regenerate in my system? Consult your owners manual or system display for the exact cycle length. Most modern softeners provide a cycle breakdown, but 60 to 90 minutes is typical for most models. If you are unsure, contact your water softener provider, like Rayne Water, for specific guidance.Our mission is to help homeowners plan and completesuccessful building and remodeling projects, from start to finish.We provide free, unbiased information to help you:Evaluate a building lot and buy it at the best price.Decide what work to do yourself, what to hire out.Negotiate successfully with sellers, designers,contractors, subs, and other professionals.Accurately estimate project costs.Build a healthy, low-energy, and durable building.Get your project built on time and on budget.Reduce your costs.Minimize your risk.And keep your sanity!FEATURED ARTICLESInstalling Leakproof Windows Updated DetailsKeep Your Basement DryPrevent Septic System FailureAvoid Cost OverrunsUNBIASED INFORMATION (from Humans, not AI Chatbots)Our philosophy is simple: The sole purpose of BuildingAdvisor.com is to help our readers with their building projects. All articles are researched and written by hands-on construction experts with decades of building experience. We have no relationship with any advertisers or products. We have no paid links, no paid content, and therefore no conflicts of interest. We are supported entirely by ads placed on our pages by Google and by sales of the BuildingAdvisor Estimating Spreadsheet.WHO WE SERVEWhether you are an owner-builder who wants to do it all, or plan to use the services of an architect, general contractor, subcontractors, or a construction manager (or arent sure which way to go), we can help make your project go more smoothly and save you money and gray hairs in the process. Who we areGET INVOLVEDIf youve read this far, youre probably the kind of person that wants to play an active role in your building project, maybe designing and contracting it yourself, and maybe even swinging a hammer.Its great to be actively involved. Youre much more likely to end up with the project you want in terms of design, cost, energy efficiency, comfort, and durability. Its not that the other people on your building team dont want to do a good job. But no one understands your goals, or cares as much about your project, as you. WHERE TO BEGINMaybe youve been thinking about this project for years, or maybe you just got started yesterday. In either case, you should begin at the beginning assessing your needs, capabilities, time constraints, and budget, and deciding what responsibilities to take on yourself and which to outsource to others.HOW TO USE THIS SITEThe site is organized roughly in the order of a typical project, although in reality, youll often be jumping back and forth between sections. Your three biggest assets going forward will be knowledge, planning, and communication:Knowledge The more you bring to your project, the better the outcome. Learn as much as you can about design, materials, building systems, contracts and contractors, costs, and risks before proceeding. Take advantage of the vast amount of information available today on the Web and elsewhere. Without knowledge you are shooting in the dark!Planning The more time you spend planning, the faster, better, and cheaper your project will be with the fewest headaches. Construction on the building site may be the most exciting phase, but the planning is the most important. Surprises on the job site always cause headaches and cost money, so dont be surprised plan ahead!Communication Remember, its your project. If you dont clearly communicate your desires to all members of your building team, dont expect things to come out the way you want. They wont! Your contract, plans, specifications,and budget are your primary tools for communication. Learn how to use these effectively to keep everyone working together, on track, to meet your goals.So dont skimp on any of these. Remember that this is a marathon, not a sprint. Take the time necessary to learn the ropes, to formulate a good plan and realistic budget, and to communicate clearly with everyone on your team. Invest your time in good planning, the building will almost build itself. Ask a question and well get you an answer as soon possible.Let us know what you think. Email your feedback and suggestions for how we can improve our site. Share your experiences with others by posting a comment at the end of any article.View our Privacy Policy. Reader Interactions Greetings, dear readers! Are you tired of hard water wreaking havoc on your plumbing system? If youre considering installing a water softener, but youre not sure how often it should regenerate, youve come to the right place. In this article, well explore the ins and outs of water softener regeneration cycles, so you can make an informed decision about how to keep your plumbing healthy and your skin feeling smooth.First, lets define what we mean by regeneration. Water softeners use a process called ion exchange to remove minerals like calcium and magnesium from hard water. Over time, the resin beads that perform this process become saturated with mineral ions and need to be cleaned. Regeneration is the process of flushing out the resin beads and replacing them with fresh ones. The frequency of this process depends on several factors, which we will discuss in detail below.What is a Water Softener Regeneration Cycle?A water softener regeneration cycle is the process by which the resin beads in a water softener are cleaned and recharged. There are two types of regeneration cycles: time-initiated and demand-initiated.Time-initiated regeneration cycles occur on a set schedule, regardless of how much water is used. Demand-initiated regeneration cycles, also known as metered regeneration, start automatically when the resin beads have reached their capacity to remove minerals. This type of regeneration cycle is more efficient because it saves water and salt by only regenerating when necessary.Factors That Affect Regeneration FrequencyNow that we understand what a regeneration cycle is, lets look at the factors that determine how often your water softener should regenerate. These factors include:FactorEffect on Regeneration FrequencyWater HardnessHigher hardness levels require more frequent regenerationWater UsageHigher usage requires more frequent regenerationTank SizeSmaller tanks require more frequent regenerationResin TypeSome resins require more frequent regeneration than othersSalt DosageHigher salt dosage requires more frequent regenerationIts important to note that these factors are interdependent. For example, if you have hard water and a small tank, your water softener will need to regenerate more frequently than if you have soft water and a large tank.How Often Should My Water Softener Regenerate?So, how often should your water softener regenerate? As with most things in life, the answer is it depends. The average residential water softener should regenerate every 7-10 days, but this number can vary widely depending on the factors we discussed above.If you have a time-initiated regeneration cycle, you can program your water softener to regenerate on a set schedule. The specific schedule will depend on your water usage and hardness level.If you have a demand-initiated regeneration cycle, your water softener will regenerate automatically when the resin beads reach their capacity. This is the most efficient way to regenerate your water softener because it saves water and salt.Advantages and Disadvantages of Regenerating More OftenAdvantagesRegenerating your water softener more often can have several advantages:Fresher, cleaner waterReduced risk of mineral buildup in pipes and appliancesIncreased lifespan of your water softenerDisadvantagesHowever, there are also some disadvantages to regenerating your water softener more often:Higher water and salt consumptionHigher energy consumption due to more frequent regenerationHigher maintenance costsAdvantages and Disadvantages of Regenerating Less OftenAdvantagesRegenerating your water softener less often can have several advantages:Lower water and salt consumptionLower energy consumption due to less frequent regenerationLower maintenance costsDisadvantagesHowever, there are also some disadvantages to regenerating your water softener less often:Poorer water qualityRisk of mineral buildup in pipes and appliancesReduced lifespan of your water softenerFAQs1. How do I know when my water softener needs to regenerate?If you have a demand-initiated regeneration cycle, your water softener will regenerate automatically when the resin beads have reached their capacity. If you have a time-initiated regeneration cycle, you can program your water softener to regenerate on a set schedule based on your water usage and hardness level.2. How can I tell if my water softener is regenerating?You can usually hear your water softener running during the regeneration cycle. Additionally, some water softeners have a display or indicator light that shows when the unit is regenerating.3. Can I manually initiate a regeneration cycle?Most water softeners have a manual regeneration option, which allows you to initiate a regeneration cycle at any time. However, this should only be done if your water softener is malfunctioning or if you have experienced a sudden increase in water usage.4. Does cold water affect regeneration?No, the temperature of the water does not affect the regeneration process.5. Will my water be hard during the regeneration cycle?Yes, your water will be hard during the regeneration cycle because the resin beads are being cleaned and recharged. However, some water softeners have two tanks, so one tank is always available to provide soft water.6. How long does a regeneration cycle take?The length of a regeneration cycle depends on the size of your water softener and the level of mineral buildup. Most regeneration cycles take between 60 and 120 minutes.7. Can I drink water during the regeneration cycle?No, you should not drink water during the regeneration cycle because it will be hard and may contain salt.8. Will my water bill increase if I regenerate more often?Regenerating your water softener more often will increase your water usage, which may result in a higher water bill. However, this increase is usually negligible.9. How often should I replace the resin beads in my water softener?The resin beads in your water softener should last for 10-15 years with proper maintenance. If your water softener is not functioning properly or if you are experiencing poor water quality, it may be time to replace the resin beads.10. Can I use a water softener with a septic system?Yes, you can use a water softener with a septic system. However, you should choose a water softener that uses a low-sodium resin and avoid discharging the brine discharge into the septic system.11. Can I use potassium chloride instead of salt in my water softener?Yes, you can use potassium chloride instead of salt in your water softener. Potassium chloride is more expensive than salt but is a good option if you are concerned about the environmental impact of salt.12. How do I maintain my water softener?To maintain your water softener, you should:Check salt levels regularlyClean the brine tank periodicallyReplace the resin beads every 10-15 years13. Can I install a water softener myself?While it is possible to install a water softener yourself, it is recommended that you hire a professional plumber to ensure that the unit is properly installed and functioning correctly.ConclusionAs weve seen, the frequency at which your water softener should regenerate depends on several factors, including water hardness, usage, tank size, resin type, and salt dosage. The average residential water softener should regenerate every 7-10 days, but this number can vary widely depending on your specific situation.When deciding how often to regenerate your water softener, its important to weigh the advantages and disadvantages of more frequent or less frequent regeneration. Ultimately, the goal is to balance water and salt consumption with water quality and maintenance costs.If youre still unsure about how often your water softener should regenerate, consult with a professional plumber or water treatment specialist. With the right information, you can keep your plumbing healthy and your water feeling soft and silky.Closing DisclaimerThe information provided in this article is for informational purposes only and should not be used as a substitute for professional advice. Always consult with a licensed plumber or water treatment specialist before installing or maintaining a water softener.Watch Video:How Often Should My Water Softener Regenerate: The Ultimate Guide Click/ tap to get started Get advice from a Certified Water Specialist (CWS) and Certified Water Treatment Representative (CWR)No need to analyze testing data and sift through endless options! I do the heavy lifting for youGet a custom water treatment plan for your specific water situation and budget. Before you can address any underlying issues, its best to first get a good understanding of whats in your water. Conduct a home drinking water quality test to find out what youre working with, and what needs to be dealt with. Safe water is essential. For some folks, like pregnant women, infants, and those with underlying health concerns, this is even more important. Consider your unique needs while consulting the results from your water quality test. Whether you need water treatment, purification, or a combination, finding the right solution starts with education. Read comprehensive guides & reviews written by industry experts to learn all about the recent tech and most innovative systems available.I just want to say thanks for reading, Im glad you made it here. I completely value everyone Ive met because of this website. Most importantly, its our #1 goal to help you get access to clean water. Got a question? Need specific advise? Just want to have a nice chat? Reach out! Well do whatever we can to help Ready to Get Started? Take the quiz to get a personalized recommendation about how to ensure clean, contaminant-free water Risk of dangerous blood disorder called methemoglobinemia. Long-term can cause cancer, high blood pressure, heart disease, and neurological issues Often added to water during treatment. Possible risk of cancer and skeletal fluorosis. Large amounts can affect kidney and liver function Pose threat of waterborne illness if water is not properly purified. Chloramine Used during water treatment. Leaves residual taste and smell in water. Chlorine Used to disinfect water but leaves a distinct taste and smell. Lead Consumption of lead in water can lead to high blood pressure and kidney damage. The regeneration cycle is when calcium and magnesium-saturated resin beads are removed by brine water and then replenished with sodium ions for effectively softening the water. It involves five stages: Backwash Remove the dirt and particles that have been collected.Brine draw Adding brine to the resin tankSlow rinse Washing away excess salt and hard mineral ionsFast rinse Removing traces of exchanged hardness ionsRefill cycle Making fresh brine solution Continue reading for a detailed walkthrough of the 5 stages of the water softener regeneration cycle. What Are the 5 Stages of Water Softener Regeneration? StageWhat HappensDurationFlow Rate NeededBrine Tank BackwashingRemoves the accumulated dirt and particles10 minutes6 GPMBrine DrawIntroduction of Brine to the resin tank30-40 mins1 GPMSlow Brine RinseRemoves excess salt and hardness ions with a slow rinse15-20 mins1 GPMFast RinseRemoves traces of ions left in the resin tank50-60 mins2 GPMBrine Tank RefillPreparation of fresh brine solution for the next cycle5-6 minsN.A. Lets look at each stage of the regeneration process in little detail. This is the first stage in the REGEN process. In this step, feed water passes through the control valve and the central tube, eventually reaching the resin beds bottom. As the water rises from the bottom of the resin bed, it loosens the resin mattress, collects all the dust, debris, and other contaminants, and leaves from the top of the tank. This stage usually takes around 10 minutes at a fast flow rate of 6 GPM. Also Read: How Many Grain Water Softener Do I Need? The next stage is the Brine Draw cycle, which involves transferring a concentrated salt-water solution from the brine tank into a resin tank. Through the ion exchange process, sodium ions from the salt brine exchange with calcium and magnesium ions (hardness minerals) and replenish the beads for another softening cycle.The brine flows from the resin bed into the centre tube and drains out of the softener. This cycle takes 30-40 minutes to complete at a flow rate of 1 GPM. Also Read: Best Water Filter For Calcium After the brine draw, a slow brine rinse comes. In this stage, fresh water from the water supply is poured onto the resin bed through an injector or eductor valve. It takes up the remaining salt solution and hardness mineral to the collector at the bottom of the water softening system in the resin tank and from there to out of the softener. Hence, it cleans the resin tank. This stage takes 15-20 minutes at a flow rate of 1 GPM. Also Read: Best Water Softener Salt The fast rinse stage comes directly after the slow rinse, where fast-flowing water compacts the loosen-up resin bead. It also removes the traces of the salt solution and hardness minerals (calcium and magnesium) in the resin tank. This cycle takes around 50-60 minutes at a flow rate of 2 GPM. Also Read: How Do I Know if My Water Softener Resin Needs Replacing? In this last stage, the salt brine is again prepared to replenish beads with sodium ions in the next REGEN cycle. Here, the water flows directly into the brine tank (with salt pellets) from the building water supply, and then the brine solution is prepared. This cycle typically takes about 5-6 minutes to complete. The water softener goes through all five steps in the REGEN cycle to convert hard water into soft water. These cycles are crucial because they keep resin beads fresh and improve their water softening process capacity. It is generally advisable to avoid using water while water softener regenerates since hard water may fill and damage the water heater. Its best to set REGEN at 2 AM when no one uses water for all five stages to complete smoothly. Also Read: How To Remove Limescale Deposits Water Softener Regeneration Cycle: FAQs The water softener regeneration process takes approximately 2 hours to regenerate properly. You should not use your water softener during REGEN as it can cause buildup inside the water heater. So, better set the water softeners regeneration cycle to run at 2 AM when no one uses water. Here are some signs that the water softener system is regenerating:1. Hum sound of working motor2. Sound of water flowing down the drain3. Dropping salt level No, you should not use water when the water softener is regenerating, as hard water will bypass the softener and cannot function properly.This hard water may flow through pipelines and even appliances, which might cause buildup problems. In backwash, the water from the supply reaches the bottom of the resin tank and rises. It causes the resin mattress to loosen up and eliminate the accumulated dirt, impurities, and sediments from the tank in 10 minutes. Your water softener should regenerate every 2-3 days, but this depends on several factors:1. Incoming water hardness2. Iron and manganese concentration in water3. Resin Tank capacity, and4. How much water is used every day.Its best to opt for demand-initiated water softeners that can REGEN based on water usage rather than manual programming. Share copy and redistribute the material in any medium or format for any purpose, even commercially. Adapt remix, transform, and build upon the material for any purpose, even commercially. The licensor cannot revoke these freedoms as long as you follow the license terms. Attribution You must give appropriate credit , provide a link to the license, and indicate if changes were made . You may do so in any reasonable manner, but not in any way that suggests the licensor endorses you or your use. ShareAlike If you remix, transform, or build upon the material, you must distribute your contributions under the same license as the original. No additional restrictions You may not apply legal terms or technological measures that legally restrict others from doing anything the license permits. You do not have to comply with the license for elements of the material in the public domain or where your use is permitted by an applicable exception or limitation . No warranties are given. The license may not give you all of the permissions necessary for your intended use. For example, other rights such as publicity, privacy, or moral rights may limit how you use the material. We may earn a commission if you click on a link, but at no extra cost to you. Read our disclosure policy for information.Water softeners work by exchanging ions in the water with sodium or potassium ions. This process is known as ion exchange. Over time, the water softener will become less effective as the exchangeable ions are used up. Regeneration is a process that cleans the resin beads and replenishes the supply of exchangeable ions. But how often should they regenerate?How often should water softener regenerate?For most homes, a water softener should regenerate about once a week. If you have particularly hard water, or if you use a lot of water, it may need to regenerate more often. You can usually adjust the frequency of regeneration as needed. Some water softeners have a built-in timer that regenerates the unit on a set schedule. Others have sensors that track the amount of water used and regenerate whenever necessary.Once youve determined how often your softener should regenerate, you can set it and forget it. While you may need to occasionally add salt to the brine tank, theres no need to adjust the settings unless your water usage changes significantly.How long does the regeneration last?The amount of time it takes to regenerate a water softener depends on the model and specific settings. However, regeneration typically takes between 30 minutes and 2 hours. By comparison, some models of water softeners can regenerate in as little as 15 minutes or less.Many models also have a delayed start feature that allows you to set the regeneration cycle to occur overnight or at another time when water usage is low. This can help to minimize any disruptions to your normal routine.Types of water softener regenerationThere are three main types of water softener regeneration processes: manual, meter-demand, and time-clock.Manual regeneration is when the user initiates the process by turning a knob or pressing a button.Meter-demand regeneration is more automated, as it uses sensors to monitor water usage and will initiate the cycle when necessary.Time-clock regeneration is when the process is set to occur on a regular schedule, regardless of how much water has been used.Whichever type of system you have, the regeneration process works by flushing saltwater through the tank in order to remove any built-up calcium and magnesium deposits. This ensures that your water softener can continue to effectively soften your water.Cycles of water softener regenerationWater softener regeneration typically happens in four steps:Backwash: This step removes any debris or sediment from the unit.Recharge: This step restores the charge to the resin beads.Regeneration: This step removes the hardness from the resin beads.Rinse: This step rinses the unit and removes any salt or brine from the unit.These steps happen in a cycle, and the cycle can be set to run automatically or manually. Depending on the brand and model of your water softener, the regeneration process may take anywhere from 30 minutes to two hours.Factors affecting the frequency of regenerationThere are a few different factors that can affect how often your water softener will need to regenerate.The amount of water your household uses: If you have a large family or use a lot of water for cooking, laundry, and bathing, you will need to regenerate your water softener more often.The hardness of your water: The harder your water, the more salt it will take to soften it, and the more often you will need to regenerate the unit.The size of your water softener: A larger unit will be able to treat more water before it needs to be regenerated.Your homes plumbing: If your home has a lot of plumbing or if the pipes are small in diameter, you may notice that your water softener regenerates more often. This is because there is less contact between the treated water and the pipes, so the softened water does not have a chance to work as effectively.The type of resin beads in your unit: Some types of resin beads can become clogged more easily than others, which means they will need to be regenerated more frequently. If you are having trouble with frequent regeneration, you may want to consider switching to a different type of resin bead.Signs that your water softener is regeneratingIf you have a water softener, you should know if its regenerating so you can keep an eye on it and make sure the process is running smoothly. Here are a few signs that your water softener is regenerating:You may hear the unit cycling or see the regeneration light on.The water pressure may drop temporarily.The water coming out of your taps may be cloudy or discolored.You may notice a salty taste in your water.If you notice any of these signs, its a good indication that your water softener is in the middle of its regeneration cycle. Keep an eye on the unit and make sure everything is running smoothly.Can water softener regenerate too often?Yes, a water softener can regenerate too often. If this happens, its usually a sign that something is wrong with the unit and you should contact a professional for help.There are a few reasons why your water softener might be regenerating too often:The unit is set to regenerate too frequently: If your unit is set to regenerate more often than necessary, it will use more salt and water than necessary, which can be a waste of resources.The type of resin beads in your unit: Some types of resin beads can become clogged more easily than others, which means they will need to be regenerated more frequently. If you are having trouble with frequent regeneration, you may want to consider switching to a different type of resin bead.Your homes plumbing: If your home has a lot of plumbing or if the pipes are small in diameter, you may notice that your water softener regenerates more often. This is because there is less contact between the treated water and the pipes, so the softened water does not have a chance to work as effectively.If you notice that your water softener is regenerating too often, contact a professional for help. They will be able to diagnose the problem and help you find a solution.How to regenerate a water softener? [Our Step-By-Step Guide]If youre having trouble with your water softener, its important to know how to regenerate the unit so you can troubleshoot the problem. Heres a step-by-step guide to regenerating your water softener:Step 1: Check the Salt LevelBefore you start the regeneration process, check the salt level in your unit. If the salt level is low, it will take longer for the unit to regenerate and the process will be less effective.Step 2: Set the regeneration cycleNext, youll need to set the regeneration cycle. This will tell the unit how often it should regenerate and how long the process should take.Step 3: Start the regeneration processOnce youve set the regeneration cycle, you can start the process. The unit will begin to regenerate and youll see the regeneration light come on.Step 4: Check the unit during regenerationIts important to check on the unit during regeneration to make sure everything is running smoothly. You may hear the unit cycling and see the regeneration light on. The water pressure may drop temporarily. The water coming out of your taps may be cloudy or discolored. You may notice a salty taste in your water.Step 5: Finish the regeneration processOnce the regeneration process is complete, the unit will turn off and the regeneration light will go off. You can then resume using your water softener.Regenerating your water softener is an important part of keeping the unit running smoothly. By following these steps, you can ensure that the process is done correctly and that your unit is working properly.Final ThoughtsThere you have it! Thats everything you need to know about water softener regeneration cycles, including how often the unit should regenerate, what to do if it regenerates too often, and how to regenerate the unit correctly.By following these tips, you can ensure that your water softener is running smoothly and that your home has softer water.If youve been researching water softeners, youve probably come across the term regeneration process many times. Naturally, youll be wondering what on earth it is and how it works.To get you up to speed, weve put together this in-depth guide on the water softener regeneration process. We explain what it is, why its important, and how often it happens. We also troubleshoot common regeneration problems so you can keep your water softener running smoothly.Water Softener Regeneration Process: Photo Credit softener regeneration is the process of flushing out the calcium and magnesium hard water minerals that build up in the softeners resin bed. This also recharges the resin beads so that they can effectively remove hard water minerals from your water.A water softener works through ion exchange, a process in which positively charged mineral molecules are attracted and trapped by a negatively charged resin bed. This bed replaces the hard magnesium and calcium ions with softer sodium ions.However, the resin bed cant maintain its negatively charged sodium status forever. After a while, it becomes saturated with all the calcium and magnesium molecules it traps.So, to continue functioning properly, the system needs to clean and recharge the resin bed every once in a while. To that end, most traditional softening units feature two tanks: a resin tank where the softening happens, and a brine tank that provides a brine solution used to flush out the resin bed.Most devices come with a pre-programmed regen time determined by the hardness of your water and the capacity of the device. When that regen time comes, the brine solution starts making its way through the whole system, sending trapped minerals down the drain and recharging the resin bed.Heres how the regen cycle works:The water softener cleans hard waterThe water softeners resin bed gets saturatedThe water softener switches frequencies and needs to be regeneratedThe water softener opens the brine tank and uses a salt block to prepare a brine solutionThe water softener flushes through the salt block, cleaning out the resin bedThe water softener flushes through the entire tank, cleaning it and rinsing out excess saltThe water softener switches back to its original settingsThe water softener starts to soften hard water againEach of these steps happens automatically except for salt block renewal. As a water softener owner, its your responsibility to add salt to the brine tank. If youre experiencing a downtick in water quality, it might be because your water softener is out of salt.You can find the best salt for your softener in the device manufacturers online store, but local appliance stores also provide a variety of options.How often you need to replace the salt depends on your water hardness levels and the quality of the salt you use. However, its typically best to replace the salt around once a month.If you have a new water softener, its a good idea to ask the manufacturer how often youll need to replace the salt for your unit.Water softeners regenerate once a week. Usually, they do this automatically and in the early hours of the morning or during the night.During the process, water flow is greatly reduced meaning the softener is essentially out of operation. This is why most units are pre-programmed to regenerate at times when the water demand is usually at its lowest.Although water softeners typically regenerate once a week, they can regenerate more or less often, as needed. The schedule depends on the type of water softener you have, as there are models with time-initiated or demand-initiated regeneration.Time-initiated regeneration flushes the water softener after a certain amount of time (usually once a week). Its controlled by a small timer on the side of the softener and automatically resets once its regenerated.Demand-initiated regeneration measures the amount of water that passes through the softener. Once a set amount of water has been softened, the system regenerates automatically and starts over.You can also program regeneration cycles manually. This is particularly useful when its time to clean your water softener. As long as you follow the steps in your units instruction manual, its a fairly easy procedure.A water softener takes 30 minutes 2 hours to complete regeneration depending on its size and capacity.Although the process itself may seem straightforward, its actually more complex than a simple flushing. The brine solution needs ample contact time with the resin to dismantle trapped minerals and feed it an adequate amount of new sodium ions.Units with large tanks also have large resin surface areas. This means more contact time is required, which increases the length of the regeneration process.Some innovative devices have an upflowing process, while most traditional ones have a downflowing one. During an upflowing regen, the solution enters the resin tank from below and moves upward, lifting the resin up. During downflow regeneration, the resin remains stable.By lifting the resin, upflowing regen allows the solution to have more contact surface with the resin in less time compared to downflow. So, the upflowing regeneration process is generally faster and more efficient than the downflowing process.Almost every water softener brand on the market provides information on the regen time of their devices, so you can check this before making a purchase. Water Softener TanksGenerally, you cant use a water softener while its regenerating. This is because most systems have a single resin tank that needs to be flushed during the process. The resin tank cant continue to soften water while this happens.If you do use a water softener while its regenerating, it might still work to some extent. But, youll experience very low water pressure and the water it provides will be quite salty.However, some units come with dual resin tank setups or specific water reservoirs so that the regen process doesnt affect water use. If you have a dual-tank system, then you can use the softener as normal while it regenerates.The volume of water a softener discharges during regeneration can vary widely between different units. Some smaller systems may only discharge around 4 gallons of water while large units can discharge up to 70 gallons.This water is the result of two different rinse stages:Brine rinse: Once the resin bed has been flushed with brine solution, the remaining brine and captured hard minerals are rinsed away. This water is then discharged into the drain.Fast rinse: The softener then performs a final rinse with clean water to remove any remaining residue, and this water is also discharged into the drain.Unfortunately, the discharged salty water from the regeneration process can be bad for the environment as it can leak into freshwater sources and harm aquatic life. To reduce the environmental impact, try to choose a water softener with a highly efficient regeneration process.Of course, no machine runs smoothly forever. As with all appliances, there are common issues that prevent softeners from operating efficiently. So, lets see why they occur and what you can do to deal with them or prevent them.If your water is brown or tea-colored after regeneration, your unit might require a little extra cleaning to avoid rust. Iron is the most common element on earth, and although most water softeners remove iron, when theres more iron than 2 to 5mg/L in your water supply, it might still leach into the end product.Whats worse, exposing the device to more iron than it can handle will quickly render the device ineffective since the excess iron will build up on the resin tank. Eventually, the brine solution wont be able to flush it all out and itll show up in the water coming out of your faucets.To avoid this problem, use an in-depth resin cleaner, like Iron Out, on top of the regular regeneration cycle. This chemical formula will strip the rust and leave your resin sparkling clean again. You can head to our guide on how to clean a water softener for more info.That being said, if the water supply is especially rich in iron content, the best course of action is to complement the softening device with a whole-house iron water filter.Although water softeners automatically switch in and out of regeneration mode, the timing mechanisms arent always perfect. Sometimes they get stuck or broken, and the softener keeps regenerating and never softens the water.In such cases, the first thing you need to do is bypass the softening device and unplug it. Then, you can call customer support and learn about the manufacturers recommended course of action.Theyre likely to send a technician, who will probably advise you to replace the devices timer. Depending on the manufacturer, technician, and problem, the expenses might range between $100 and $600.Water softeners typically arent very loud while regenerating. However, some can create a loud banging or mechanical sound as the unit resets.For the most part, this is normal. It could just be the system resetting or the valve switching. However, if it bothers you or happens continually, you might need to call a technician.The regeneration process is absolutely vital for ensuring your water softener works effectively. This process usually occurs once a week, typically when the water demand of your household is at its lowest, and, depending on the device, it lasts 30 to 120 minutes. When its time to clean the device, you can run your own manual regen cycle by consulting the instruction manual.Although the device will usually still have water available during regen, albeit at a low pressure, we dont recommend using water within that period. If the device takes too long to regenerate, gets stuck in the process, or makes particularly loud noises, you should call a technician.On the other hand, if the water is brown, it indicates rust buildup in the system. You can take care of the rust problem with resin sanitizers, and you can install an iron filter to prevent further occurrences.Regenerating a water softener is key to removing hard water minerals. How often you need to do this depends on water hardness, household size, and tank size. Knowing this helps keep your water softener working well and efficiently. Key TakeawaysWater softeners usually regenerate every 2-3 days in demand-based systems, or once a week in timed systems.Regeneration can take up to 90 minutes and use around 25 gallons of water.Modern water softeners may regenerate daily based on demand, while older models can go a week between cycles.Proper maintenance and annual servicing can optimize water softener settings and save money.Changes in water quality or usage may require adjusting the regeneration schedule.Understanding Water Softener Regeneration ProcessThe water softener regeneration process is key to keeping your water soft. It cleans the ion exchange resin beads by flooding them with brine. This removes the hardness minerals theyve picked up.What Happens During RegenerationThe regeneration cycle begins with a backwash. This clears out any sediment or debris from the resin bed. Then, the resin beads soak in a brine solution rich in sodium ions.This brine solution pushes out the hardness minerals like calcium and magnesium. These minerals were trapped by the resin beads during the softening process.The Role of Resin BeadsThe resin beads are the core of the ion exchange process. They are small, porous, and coated with sodium ions. These ions are swapped for hard water minerals as water flows through the system.As the resin beads fill up with minerals, they lose their ability to soften water. This is why they need to be cleaned regularly.Importance of Brine SolutionThe brine solution is vital for regeneration. It washes out the minerals from the resin beads. This restores their sodium ion coating, allowing the softening process to start again.The brine solution is made by dissolving salt in water. Its then circulated through the resin bed during regeneration.Understanding the regeneration process helps keep your water softener working well. It ensures your home has soft, quality water and extends the systems life.Regular regeneration is key to maintaining the effectiveness of your water softener and ensuring your home has access to soft, high-quality water.Types of Water Softener Regeneration SystemsThere are two main types of water softener regeneration systems: time-initiated and demand regeneration. Knowing the difference can help you pick the best one for your home.Time-Initiated RegenerationTime-initiated systems regenerate at set intervals, like every 7 or 14 days. This method is simple but might not be the most efficient. It regenerates even when water use is low.Demand RegenerationDemand regeneration systems start regenerating based on water usage. They only use salt and water when needed. This makes them more efficient and can save resources.FeatureTime-Initiated RegenerationDemand RegenerationRegeneration TriggerFixed schedule (e.g., every 7 days)Based on actual water usageSalt and Water EfficiencyMay regenerate even with low water usageOptimizes salt and water usageFlexibilityLess flexible, set scheduleMore flexible, adapts to usage patternsRecommended forConsistent water usage patternsHouseholds with varying water usageWhen picking a water softener, think about your homes water use, hardness, and how efficient you want it to be. Demand systems are often more tailored and efficient. Yet, both can soften your water well. Factors Affecting Regeneration FrequencySeveral factors influence how often a water softener needs to regenerate. These include water hardness, household size, and the tanks capacity. Knowing these helps your water softener work its best.Water Hardness LevelsWater hardness levels tell us how soft or hard the water is. Soft water is 1 GPG, and very hard water is over 10 GPG. Harder water needs more frequent regeneration to stay soft.Household Size and Water UsageHow many people live in your home and how much water you use daily matter too. A family of four might use 300 gallons a day. This means you might need a 30,000-grain softener to regenerate every other day or daily, based on hardness.Softener Tank CapacityThe size of your softener tank is also key. A bigger tank holds more minerals before needing to regenerate. A smaller tank regenerates more often. Choosing the right size is vital for your softeners performance.Water Hardness LevelHousehold Size (4 people)Softener Tank CapacityRegeneration Frequency25 GPG300 gallons/day30,000 grainsEvery other day12 GPG300 gallons/day30,000 grainsEvery 4 days50 GPG300 gallons/day30,000 grainsDailyUnderstanding these factors helps you size your water softener right. This ensures it regenerates when needed, keeping your water quality high and your system running efficiently.How Often to Regenerate Water SoftenerThe frequency of water softener regeneration depends on the system type. Timed softeners regenerate weekly. On-demand softeners, like those in Phoenix, regenerate every two to three days. Highly efficient ones might regenerate daily for soft water.Its important to find the right balance between efficiency and soft water supply. Water hardness, household size, and tank capacity affect the regeneration

filter. Highly acidic water can also cause problems in combination with copper plumbing. The acidic water leaches copper from water pipes giving the water a metallic taste and leaving bright blue stains on sinks and tubs. The solution is an acid-neutralizing filter.Salt Intake & HealthThe small amount of sodium added to the water is low and generally not tasted. If it were a commercial beverage, the FDA would consider it low-sodium. The amount of sodium varies with the hardness of the water.For a hardness level of 7 to 10 grains per gallon (GPG), the softened water will contain about 18 mg of added salt per 8 oz. glass of water. Water from 3 to 6 GPG is considered moderately hard and over 10 very hard. Softened water with an initial hardness of 5 will have half the sodium of water with an initial hardness of 10.For a rough estimate, you can use this rule of thumb:Grains Per Gallon x 8 = mg salt/liter water So, for example, water with a hardness rating of 10 grains per gallon would contain this much salt:10 x 8 = 80 mg salt per liter of waterFor comparison, a tablespoon of ketchup contains about 160 mg. of salt and the average American consumes 3,400 mg of salt a day, about 1,00 more than recommended by the American Heart Association.For people on a low salt diet, the extra salt might be a concern. One option is to use the more expensive potassium chloride to recharge the brine tank. Another approach is to have the plumber bypass the water softener for the faucet you use for drinking water. This can also address taste issues if you prefer the taste of the hard water, as some do.The only way to remove the salt altogether is to use a reverse-osmosis system downstream from the water softener. These are expensive to install and operate, so they are only worth considering if you have badly polluted water that is difficult to clean any other way. The resulting water is similar to distilled water, with very little mineral content not a water taste everyone likes. Thats why so many people buy spring water rather than distilled water for drinking. Steve Bliss, BuildingAdvisor.comRead More on Water SoftenersHard Water Water Quality Reader Interactions

How many days should water softener regenerate. How often should a water softener regenerate. How many times a week should a water softener regenerate. When should i manually regenerate my water softener. How long should a water softener take to regenerate. How often do water softeners regen. How long does the water softener take to regenerate. How often should water softener regen. How often does water softener regen. How often does a water softener regenerate.