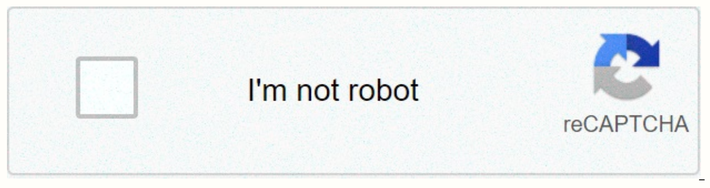

Continue

Aluminum oxide sandpaper for wood

Ten examples Prob #11-25 Return to Stöchiometry menu Problem #1: Given the following equation: 2C4H10 + 13O2 ---> 8CO2 + 10H2O show what the following molar ratios should be. a) C4H10 : O2 (b) O2 : CO2 (c) O2 : H2O (d) C4H10 : CO2 (e) C4H10 : H2O Solution: a) 2 : 13 (b) 13 : 8 (c) 13 : 10 (d)) 2 : 8 (or 1 : 4) (e) 2 : 10 (or 1 : 5) Problem #2: Given the following equation: 2KClO3 ---> 2KCl + 3O2 How many moles of O2 can be produced by allowing 12.00 moles of KClO3 to react? Solution: KClO3 to O2 molar ratio is 2:3. 2 moles KClO3 12.00 mol KClO3 — = — 3 moles O2 x x = 18.00 mol of O2 Problem #3 Example: Given the following equation: 2K + Cl2 ---> 2KCl (a) How many grams kcl is produced by 2,50 g K and excess Cl2. (b) From 1,00 g Cl2 and excess K? Solution to (a): 1) Determine moles of K: 2,50 g / 39,098 g/mol = 0.063942 molar 2) K to KCl molar ratio is 2:2. Therefore: 2 moles 0.063942 moles of K — = — 2 moles x x = 0.063942 mol of KCl 3) Determine the mass of KCl : (0.063942 mol) (74.551 g/mol) = 4.77 g (to three sig figs) A comment regarding the ratio and proportion: I usually leave the unit of moles in the mole ratio. I have included the drive in the solution for example 2 above as well as example 3a. From now on I will sometimes include the device, but will mostly leave it. Solution to (b): 1) Determine moles of Cl2: 1,00 g / 70,906 g/mol = 0.0141032 mol 2) Cl2 to KCl molar ratio is 1:2. Use a ratio and a proportion: 1 0.0141032 mol— = — 2 x x = 0.0282064 mol of KCl 3) Determine the mass of KCl formed: (0.0282064 mol) (74.5 51 g/mol) = 2.10 g (to three years figs) Problem #4: Given the following equation: Na2O + H2O ---> 2NaOH (a) How many grams of NaOH is produced from 1.20 x 102 grams of Na2O? b How many grams of Na2O is required to produce 1.60 x 102 grams of NaOH? c When 3.45 x 102 grams of Na2O reacts, how many grams of water are consumed? Solution to (a): 1) Determine grams of Na2O: 120. g / 61,979 g/mol = 1,93614 mol 2) The molar ratio between Na2O and NaOH is 1:2. Determine moles of NaOH produced: 1 1.93614 moles —— = – 2 x x = 3.87228 mol 3) Determine mass of NaOH produced: (3.87228) (40.00 g/mol) = 155 g Solution to (b): 1) Determine moles of NaOH produced: 160. g / 40,00 g/mol = 4,00 mol 2) The molar ratio between Na2O and NaOH is 1:2. Determine moles of NaOH produced: 1 x — = — 2 4.00 mol x = 2.00 mol 3) Determine the mass of Na2O consumed: (2,00 mol) (61,979 g/9 mol) = 124 g Solution to (c): 1) Determine moles of Na2O consumed: 345 g / 61,979 g/mol = 5,5664 mol 2) The molar ratio between Na2O and H2O is 1:1. Use a relationship and to determine moles of consumed water: 1 mole of Na2O 5.5664 moles of Na2O —= — 1 mol of H2O x x = 5,5664 moles of H2O 3) Determine the mass of water consumed: (5,5664 mol) (18,015 g/mol) = 100. g (to three sig figs) An alternative way of writing the answer that appears three figs is 1,00 x 102 g. Problem #5: Given the following equation: 8Fe + S8 ---> 8FeS (a) What mass of iron is needed to react with 16.0 grams of sulfur? b) How many grams of FeS is produced? Solution to (a): 1) Determine sulphur moles: 16,0 g / 256,52 g/mol = 0,0623733 mol 2) Ratio and proportion. S8 to Fe is 1:8 1 mol 0.0623733 mol — = — 8 mol x = 0.4989864 mol of Fe 3) Determine the mass of Fe consumed: (0.4989864 mol) (55,845 g/mol) = 27,9 g Solution to (b): 1) 0.0623733 mol of S8 is present. 2) Determine moles of FeS (S8 to FeS molar ratio is 1:8). 1 mol 0.0623733 mol— = — 8 moles x x = 0.4989864 mol of FeS 3) Determine the mass of FeS: (0.4989864 mol) (87.91 g/mol) = 43.9 g Problem #6: Given the following equation: 2NaClO3 ---> 2NaCl + 3O2 (a) 120.0 grams of NaClO3 will produce how many grams of O2? b) How many grams of NaCl is produced when 80.0 grams of O2 is produced? Solution to (a): 1) Determine moles of NaClO3: 120,0 g / 106,44 g/mol = 1,1274 mol 2) Ratio and proportion time. NaClO3 to O2 molar ratio is 2:3. 2 moles 1.1274 moles— = — 3 moles x x = 1.6911 mol of O2 3) Determine the mass of O2: (1.6911 mol) (32.00 g/mol) = 154,12 (to four sig figs) Solution to (b): 1) Determine moles of O2: 80.0 g / 32.00 g/mol = 2,50 moles 2) Determine the mols of NaCl (oxygen to NaCl molar ratio is 3:2). 3 moles 2.50 moles— = — 2 moles x x = 1,667 moles of NaCl 3) Determine the mass of NaCl: (1,667 moles) (58.2144 g/mol) = 97.4 g Problem #7: Given the following equation: Cu + 2AgNO3 ---> Cu(NO3)2 + 2Ag If 89.5 grams Ag was produced, how many grams of Cu? Solution: 1) Determine moles of Ag produced: 89.5 g / 107.87 g/mol = 0.8297 mol 2) Ag to Cu molar ratio is 2:1 Determine moles of Cu consumed: 2 0.8297 moles ——= —1 1 x x = 0 41485 moles of Cu 3) Determine the mass of Cu: (0.41485 mol) (63,546 g/mol) = 26,4 g Problem #8: Molten iron and carbon monoxide are produced in a blast furnace by the reaction of iron(III) oxide and coke (pure carbon). If you use 25.0 kilos of pure Fe2O3, how many kilos of iron can be produced? The reaction is: Fe2O3 + 3C ---> 2Fe + 3CO Solution: 1) Determine moles of Fe2O3 used: 25000 g / 159.694 g/mol = 156.5494 mol 2) Use a ratio and proportion to determine moles of Fe produced: 1 156.5494 moles = —— 2 x x = 313.0988 mol 3) Determine grams, then kilograms of Fe: (313.0988 mol) (55,847 g/mol) = 17485.6 g To three itself figs and convert to kg, the answer is 17.5 kg Problem #9: The average man requires 120.0 grams of glucose (C6H12O6) per day. How many grams of CO2 (in photosynthesis reaction) is required for this amount of glucose? The photosynthetic reaction is: 6CO2 + 6H2O ---> C6H12O6 + 6O2 Solution: 1) Determine levels of glucose: 120.0 g / 180.162 g/mol = 0.6660672 mol 2) The molquot ratio between CO2 and glucose is 6:1. determine mol of CO2 required: 6 x —— = — 1 0.6660672 mol x = 3.9964 mol 3) Determine mass of CO2 that reacted: (3.9964 mol) (44.009 g/mol) = 175.9 g (to four sigkon) Problem #10: Given the reaction: 4NH3 g) + 5O2 g) ---> 4NO g) + 6H2O(l) When 1.20 mol ammonia reacts, the total number of moles of products formed is: a) 1.20 b) 1.50 c) 1.80 d) 3.00 (e) 12.0 Solution: The correct answer is d. The NH3/ (NO+ H2O) molar ratio is 4:10 4/10 = 1.20/x x == 3.00 mol Bonus Problem: Potassium superoxide, KO2, used to produce O2 in space expeditions using CO2, controlled by the following equation: 4KO2 + 2CO2 ---> 2K2CO3 + 3O2 (a) How many grams of O2 is produced from 100. g KO2, given sufficient CO2? b) How many grams of CO2 can 100. g KO2 consume? Solution to (a): 1) Determine moles of KO2: 100. g / 71.096 g/mol = 1.40655 mol 2) From the coefficients in the balanced equation, we determine that KO2 to O2 molar ratio is 4 : 3. 3) Determine moles of O2 produced: 4 1.40655 mol —— = — 3 x x = 1.0549125 mol of O2 4) Determine grams of oxygen: (1.0549125 mol) (31.9988 g/mol) = 33.8 g Note that carbon dioxide is also scrubbed out of the space vehicle's atmosphere of KO2. A nice two'fer. Solution to (b): 1) 100. g of KO2 is 1.40655 mol. 2) The molar ratio between KO2 and CO2 is 2 : 1. 3) Determine moles of CO2: 2 1.40655 mol —— = — 1 x x = 0,703275 mol CO2 consumed 4) Determine the mass of CO2: (0,703275 mol) (44,009 g/mol) = 30,950 g To three figs; this is 31.0 g (a common mistake would be to write 31 g, the answer makes only 2 itself figs) Ten example Prob #11-25 Return to Stoichiometry menu Hot sale Dry eletrocoated alumina abrasive sandpaper 275 for polishing paint Function: 1)Size: 9" x 11" (230 x 280mm). we have been licensed for exporting&importing business, our products are exported to Europe, America, Asia, Africa, Australia, five continents, over forty countries. It is a member of the standard committee and expert committee in China coated abrasive Material Aluminum Oxide Coated Adhesive Sandpaper Features in Sandpaper Round Shape: 1.Vi can customize sizes like yours Q1 : What's your advantages9 A1 : We can customize the special types abrasive articles for customers' Requests. Q3 : Do you have after-sales services9 A3 : Yes, we have complete after-sales services, if you encounter any quality problems with our products. FREE SHIPPING OVER $89 | EXCLUDES OVERSIZED PRODUCTS (SANDING BELTS AND BOARDS OVER 16 WIDE) For someone who only starts woodworking or stool/furniture upcycling, even the topic of sandpaper can be confusing. Instead of working on your projects, you spend time searching and collecting info. Even when you make your decision, you still may not be quite sure if you made the right choice. If it's you getting confused about what sandpaper to choose for your projects, this article will go through the basics. From gravel numbers to materials used. Everything you need to know about sandpaper for woodworking to get the results you want. Sandpaper Basics When it comes to grinding, you can either do it by hand or use power tools. Both methods have their applications. Using power grinders allows wood shaping and removing a lot of materials, stains and irregularities. It's much faster, but you have to learn how to use the power of Sanders to achieve the best results and not damage the surface. Sandpaper used with power tools is available in various shapes and shapes such as discs or sheets. Discs are used with RO grinders and can either be attached by hook and loop system or grinding by hand is usually much more labor intensive and much longer. But you have more control over the grinding pressure, and you can reach power grinder locations wouldn't be able to. Hand grinding would be go-to while preparing your piece for finishing and between layers of

finish(stain, poly, wax). You can use the usual sandpaper sheets or grinding blocks/sponges for hand grinding. YOU MAY ALSO BE INTERESTED IN:Wood Grinding Tips for Upcycling and Pall ProjectsBest Sander for PallesBest Sander for FurnitureBest Finishing Sander-Buying Guide and Sanders ReviewsBest Sander for Removing PaintBest Random Orbital Sander - Buying Guide and Sander ReviewsRemoving Paint from Wood- Tips, Tricks, and Techniques When it comes to sandpaper types, there are mainly two types: commercial and industrial quality. They differ in abrasive materials used, the backing material (paper, fabric or plastic), and glue. In paper of industrial type, materials of superior quality are used for all three components. Grit Numbers These numbers are used to mark the size of the abrasive particles. The higher the number, the smaller the particles and finer the sandpaper. The lower the figure, the coarser the sandpaper that particles go up in size. The larger the particles, the more visible scratches they create. The gravel of the sandpaper varies from 24 to over 2000, but for woodworking a range of 60-220 is what is usually You can ask why do ask what gravel I use as long as it does the job? Well, it turns out it matters pretty much. Specific gravel numbers are used for specific tasks, as shown below. From grinding rough wood to wall and floor grinding to vehicle work. You do not want to damage the ground surface by using gravel that is too rough. Or you don't want to use too finer gravel if you're going to stain wood, for example, because the surface will be too smooth and the stain won't take. Normal Grit Ranges and read a sheet of sandpaper are used to have all the info on particle size, type of abrasive, and even glue type used printed on the back. Nowadays you usually only find the brand and the gravel number. Grits that are marked with P-X, where X is gravel size, are a standard in Europe, in the United States the number is usually only. There is a slight difference between them in terms of the actual particle size. In lower intervals, the difference is minimal, but if you go up the gravel it becomes quite significant. It's about the same as going up to 240 grit, slightly above, and you should pay attention- the P800 equals a Standard 400. Since we're only talking here about wood grinding, this doesn't matter much as you won't use ultra-fine grits. But I thought it's worth mentioning. P12 – P 36 – extra rough usually used for wooden floor initial grinding, very quick removal of materialP40 – P50 – coarse, cut through old paint, shapes, and round edges; not recommended for plywood as you can sand through the face layerP60 – P80 – medium i.e. grinding of bare wood, gentle removal of varnish and final finishingP100 - P 120 - fine, used for cleaning plaster and water stains from wood, preparing wood for finishingP150 - P220 very fine, grinding of bare woodP240-P320 very fine, grinding finish between consecutive coats and plaster and wood As I mentioned in my post on grinding wood for upcycling projects , the materials used to produce sandpaper have changed over time. What we used then is completely different from what we use now. In general, we have two types of abrasive- natural and artificial. Everyone has different applications and results. Natural Yarn – brownish red in color, usually used for hand grinding. It is good for raw wood, removing light scratches preparing surfaces for finishing. Using the grenade will not sand the wood quickly but will gove better finish. Emery– comes with a cloth surface, and it's great for grinding metals. Too soft for other uses, though. Glass – glass paper is yellow in colour and lightweight. Since it deteriorates rapidly is rarely used for woodworking Aluminum oxide - more durable than grenade but does not leave so nice of a finish. The most common type used in woodworking, especially with a power tie, is also used for hand grinding. The particles break during use revealing new, carbide– extremely hard but not as durable as alumina. Used mainly to sand metal surfaces i.e., to remove rust or to sand drywall to smooth joints. It allows wet grinding using water as a lubricant. And although it can also be used to sand between layers of finishes, it is not usually used for woodworking. High-tech ceramics– one of the most durable and long-lasting abrasives on the market. It allows aggressive grinding and quick material removal on wood. It is mainly used in the belt grinding strap and disks for power grinding. It will usually leave a very rough finish, so proceed with caution while grinding or veneer. Alumina zirconia– very similar to silicon carbide and garnet but cuts faster and lasts longer. Although not as durable as ceramics. Its particles will break off during breathing, exposing new, sharp edges. It is used in grinding belts, boards and cushions. How the sandpaper performs is determined by the number of abrasive particles per square inch of paper. Fewer particles and more space between means less clogging with dust particles. Open coat-rough grains are typically open coat, which means about 30% fewer abrasive particles and more space in between. Best used for hardwood and metals. Closed coat- for finer grits 150 and above where there is less chance of clogging, the paper is completely covered with abrasive particles. Best used for soft or reiny wood such as pine or spruce. Zinc stearate- a soap substance used to treat sandpaper to prevent clogging. Recommended for reapered wood and grinding painted surfaces. Choosing the right sandpaper for the right task will give better and faster results. So take your time. Choose the best type of sandpaper as well as grit number for your grinding job. for quick removal of bearings use grinding strap or disc (ceramic or alumina)for contoured surfaces use flexible grinding sponge (alumina) for smoothing flat surfaces use grinding wheel or sheet (alumina) for smoothing clear finish; use water as a lubricating film using fabric-backed wet-or-dry sheet (alumina) for all-around wood-grinding tasks using the paper-backed sheet (grenade) at for polishing the edges of cut glass and plastic, or producing a light luster on aluminum or copper surfaces (silicon carbide) With the type of sandpaper decided, now you need to decide what is the starting rail that you need for your project. Then you will go through the grains of the sandpaper. Each finer gravel remove scratches from the previous one until you will be satisfied with the final smoothness/results. The starting gnytet depends on the wood itself, and for the piece milled to thickness with a planer, you can start with (P)150. But for upcycling pallets, you would often start with 60 or even 40 to remove stains and irregularities. The next gravel should not be higher 50% of the previous one. So if you start with 60, then you then 80, 120, 180. The next question is, at what point should I stop grinding? It depends on what you want to achieve. Finer grits smooth the wooden surfaces more so it doesn't take much finish. So if you use oil or clear finish, you would generally stop at 180. There is no need to go higher as you will grind between layers of finish. The end result is a smooth finish on wood, not the wood itself. If you use a stain or dye, you can go up to 220. Ever higher as the 320 will create a very smooth, glass-like surface that won't take much of the finish. But there are cases when I would use such a high gravel, and it is grinding chalk painted surfaces before sealing for a very even finish on furniture. This would remove all brush strokes that are typical when using chalk type color. Summary Sanding is not woodworkers' favorite task, but turning a piece of wood from rough to smooth one is somehow satisfying. Choosing the right tools, including sanding paper, will help you achieve the desired result and reduce the time you spend on this task. Make sure you pick the type of abrasive according to your project. Start with the right gravel number and finish with the right one too to get the results you want. I hope this article has answered the questions you may have had. But if you're still confused and insecure, just let me know, and I'll try to help you the best you can. Just leave the comment in the box below. Don't forget to attach it to your woodworking/DIY tips board! Thanks! Thanks!

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