

FMEA Table for a Toaster

ID. No	Item ID.	Function	Failure Mode	Failure Cause	Failure Effect	Risk Assessment			RPN	Action Required/Remarks
						Detection	Occurrence	Severity		
1	Electrical cord	Provides electricity to toaster	No electricity to power the toaster	Not plugged in	Untoasted bread	2	7	1	14	Plug cord in
			Power shorts	Cut cord	Untoasted bread	2	2	2	8	<u>Option 1:</u> Take toaster in for repair
					Electrocution if plugged in	2	2	10	40	Replace cord
					Fire	2	2	10	40	<u>Option 2:</u> Buy a new toaster
2	Heating element	Provides the heat to heat the bread	No heat coming from heating elements	Broken/cracked heating element	Untoasted bread	8	2	4	64	<u>Option 1:</u> Take toaster in for repair
				Broken heating sensor	Untoasted bread	8	2	2	32	Replace heating element
			Heating elements are overheated	Heat sensor is defective	Burnt toast	8	2	6	96	<u>Option 2:</u>
					Fire	8	2	10	160	Buy a new toaster
3	Timing dial	Timing device which determines how long a piece bread will be toasted	Bread is in the toaster too long	Defective control	Burnt toast	7	2	6	84	<u>Option 1:</u> Take toaster in for repair
					Fire	7	2	10	140	
			Bread is not in the toaster long enough	Defective control	Untoasted bread	7	2	1	14	Replace timing dial <u>Option 2:</u>

										Buy a new toaster
4	Heat sensor	Determines the temperature and how hot to make the heating elements	No heat coming from heating elements	Broken heating sensor	Untoasted bread	8	2	2	32	<u>Option 1:</u> Take toaster in for repair Replace heat sensor <u>Option 2:</u> Buy a new toaster
			Heating elements are overheated	Heat sensor is defective	Burnt toast	8	2	6	96	
					Fire	8	2	10	160	
5	Spring	Pulls the bread up and down into the toaster	Bread won't go down into toaster	Broken spring	Untoasted bread	4	7	2	56	<u>Option 1:</u> Take toaster in for repair Replace spring <u>Option 2:</u> Buy a new toaster
			Bread is stuck inside the toaster	Broken spring	Burnt toast	4	7	4	168	
					Fire	4	7	10	280	
6	Bread rack	Holds the bread in place during toasting	Bread is stuck inside the toaster	Broken rack	Burnt toast	2	3	5	30	<u>Option 1:</u> Take toaster in for repair Replace bread rack <u>Option 2:</u> Buy a new toaster
					Fire	2	7	10	140	

S= severity rating; from 1 to 10; estimates how serious each effect is; from 1 to 10, where 1 is insignificant and 10 is catastrophic.

O= occurrence rating; estimates the probability of failure occurring for that reason during lifetime; from 1 to 10, where 1 is extremely unlikely and 10 is inevitable.

D= detection rating; estimates how easy to detect problem; from 1 to 10, where 1 means absolutely certain to detect the problem and 10 means certain not to detect the problem.

$RPN = S \times 0 \times N$