

Defect Rate Tracker

How-to guide: what the workbook does, how to use it and what every number means.

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Defect Rate Tracker

Log inspection lots and the defects found, and see defect rate, PPM, DPU, DPMO and the top defect types by part and week.

For: Quality engineers, inspection leads, supervisors and anyone preparing a customer quality scorecard.

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Quick start

1. On Setup, type your plant name and PPM target, then replace the example parts (with the opportunities checked on each unit) and defect types.
2. On Inspection Log, add one row per inspected lot: lot ID, date, part, units inspected and defective units (units with one or more defects).
3. On Defect Log, add one row per lot and defect type with the number of defects found. Each lot picks up its defect total automatically.
4. Read the Check columns: anything other than OK names the problem in words.
5. Open the Dashboard. Use the part and date filters at the top to look at one part or one week.

What is in the workbook

Start Here	Read this first: what the workbook does and how to use it.
Setup	Your plant, PPM target, parts and defect types.
Inspection Log	One row per inspected lot: units inspected and defective units. Defects come from the Defect Log.
Defect Log	One row per lot and defect type: how many defects of that type were found in the lot.
Dashboard	PPM defective, DPU, DPMO and the top defect types, for the part and dates you choose.
Method	How every number is calculated, with assumptions, limits and sources.
Verify	Self-check: the workbook's formulas recomputed on fixed inputs against an independent reference.

What each number means

Quantity	How it is calculated	Units
Defects found	Sum of the Defect Log counts with the same lot ID. Excel: =SUMIFS(tblDefects[Count], tblDefects[Lot ID], [@Lot ID])	defects

Quantity	How it is calculated	Units
Opportunities checked	Units inspected x opportunities per unit (Parts list).	opportunities
Defect rate	Defective units / units inspected.	%
PPM defective	Defective units / units inspected x 1,000,000 (= defect rate x 10,000).	PPM
PPM status	On target at or below the PPM target; Near target up to 5% above it; Above target beyond.	-
DPU	Defects found / units inspected.	defects/unit
DPMO	Defects found / opportunities checked x 1,000,000.	per million
Dashboard roll-ups	SUMIFS over the Inspection Log restricted to rows whose View date is filled in (inside the part and date filters); weeks start on Monday. Change vs week before = this week's PPM - the previous week's.	-
Pareto and matrix	Defect Log counts per defect type (and per part), for defect rows whose lot is in view. The Pareto ranks types largest first; ties keep list order; helper columns AO:AQ (hidden) hold the unsorted values.	defects, %

Assumptions, limitations, sources and the self-check (the Verify sheet, which recomputes the workbook's formulas on fixed test inputs) are in the workbook. The last page shows the Dashboard with the example data for Corran Pressings, a fictional business.

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Engineering estimates for planning and improvement work. Verify the results against your own process, data and standards before you rely on them.

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Part

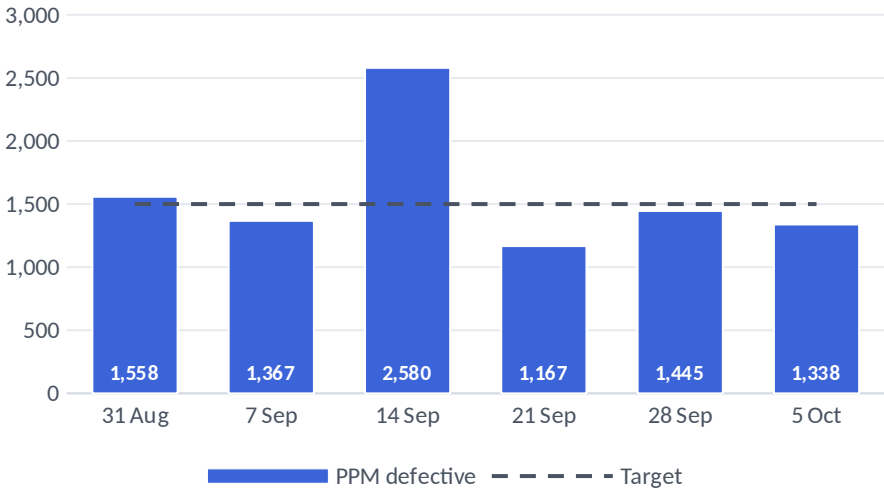
From

To

Showing 120 lots and 198 defect rows. Leave the filters blank to include everything; dates are inclusive.

PPM DEFECTIVE	DEFECTS PER UNIT (DPU)	DPMO	TOP DEFECT TYPE
1,574 Target 1,500 Near target	0.0018 Defects found / units inspected	348 Defects per million opportunities	Burr Ranked by defects, see the Pareto

PPM defective by week



Defects by type

