

# 1.1/ Maintenance costs per ton of good production

## 1/ Definition

Maintenance cost (without maintenance CAPEX) per ton of good production.

## 2/ Objective / Target

The set of strategic indicators has three main objectives:

- Verification of the effectiveness of maintenance processes
- Comparisons between plants independently from the business
- Comparisons with external organizations

## 3/ Formula

**Maintenance costs per ton of good production = Maintenance expenditures /Production**

**Unit:** local currency / ton

**Details of the formula:** see "5/ SAP extraction and detailed calculation"

## 4/ Frequency

Yearly

## 5/ SAP extraction and detailed calculation

**Maintenance expenditures\* =**

- Cost of outside contract services
- + Cost of all Solvay maintenance employees
- + Cost of non-stock MRO items
- + Cost of inventory MRO items
- + Cost of on site contractors

**Production =** Total amount of good product produced in the corresponding period, in tons.

Causes categories	RCS	Solvay
Cost of outside contract services	cost element 99210030	
Cost of all Solvay maintenance employees	cost element 99210040	
Cost of non-stock MRO items	cost element 99210050	
Cost of inventory MRO items	cost element 9210060	
Cost of on site contractors	cost element 99210070	
Production	Value stream production	

\*

### **Cost of Outside Contract Services:**

Expenses for maintenance work that is contracted due specialized skills or equipment needed.  
(Examples are water blasting, scaffold build/removal, forklift maintenance, HVAC maintenance, specialized millwright work, specialized inspection services, code vessel repair work, etc.)  
Must be entered in the local currency.

### **Cost of all Solvay maintenance employees:**

Internal labor including all people supporting maintenance activities (managers, supervisors, planners, schedulers, storekeeper, administrative assistants, etc.).

Employees who report to the maintenance organization but who are not directly involved in maintenance activities are not considered as maintenance employees (utilities operators, purchasing agents, etc.).

Must be entered in the local currency.

**Cost of Non-stock MRO items:**

All spare parts, equipment and materials purchased directly from suppliers.

Must be entered in the local currency.

**Cost of Inventory MRO items:**

All spare parts, equipment and materials purchased through the stores system.

Must be entered in the local currency.

**Cost of on-site Contractors:**

Expenses for maintenance work that is contracted instead of using internal maintenance resources. This contract work is performed because of a contracting strategy or lack of internal resources.

Must be entered in the local currency.

QlikView layout

KPI Code	KPI Label	Unit	2014	2015	2016	Ref. Low	Ref. High	Trend	Trend vs Y-1
1.1.	Maintenance costs per ton of good production	K€/TO	0	0	0	0	0		
1.2.	Direct impact of maintenance on industrial performance	TO	17 536	14 320	21 480	600	1 000		
1.3.	Maintenance costs versus replacement asset value	€	0	0	0	0	0		
1.4.	Structure of maintenance costs	%				-	-		
	% Labor	%	-	-	-	-	-		
	% MRO (spare parts and materials)	%	-	-	-	-	-		
	% Major works (shutdowns/turnarounds/maintenance CAPEX)	%	-	-	-	-	-		
1.5.	% Solvay maintenance headcount versus Solvay plant headcount	%	NA	NA	NA	NA	NA		NA
1.6.	Structure of maintenance labor	%	NA	NA	NA	NA	NA		NA
1.7.	Cost by type of activity	%				-	-		
	% Corrective maintenance	%	-	-	-	30.0%	40.0%		
	% Preventive maintenance	%	-	-	-	30.0%	50.0%		
	% Improvement maintenance	%	-	-	-	15.0%	30.0%		
1.8.	Importance of MRO (spare parts)	%				-	-		
	Value of stores MRO versus replacement value	%	0.6%	0.8%	-	0.8%	1.2%		
	Store turns	%	24.0%	44.0%	-	30.0%	50.0%		
1.9.	% Works that must be started immediately or within 24h	%	-	-	-	15.0%	25.0%		
1.10.	Spend versus budget	%	-	483886009.1%	-	-	-		
1.11.	CAPEX investments	€	1 396	1 902	0	0	0		