**C)**

RT plc manufactures a chemical product and has operated a standard costing system to control the variable costs of the product.

The standard cost for the chemical product is:

|  |  |  |
| --- | --- | --- |
|  |  | £ |
| Direct materials A | 2 kg at £4 | 8.00 |
| Direct materials B | 4 kg at £3 | 12.00 |
| Direct labour | 2 hours at £12 per hour | 24.00 |
| Variable overheads | 2 hours at £7 per direct labour hour | 14.00 |

The company’s annual production budget is for 60,000 units produced evenly over the year.

The first quarter shows the following results:

Production volume was 14,000 units.

|  |  |
| --- | --- |
|  | £ |
| Direct materials A - 28,500 kg | 108,300 |
| Direct materials B – 56,000 kg | 168,000 |
| Direct labour – 29,000 hours | 319,000 |
| Variable overheads | 200,000 |
| Total variable production costs | 795,300 |

The management are modestly pleased with the actual results for the quarter. While some seem under control, others significantly differ from those set out in the standard costing system.

**Required:**

**a) Prepare a full variance analysis statement of the variable cost elements.**

**Calculation of the variances**

**Direct materials cost variances: Direct materials USAGE variance + Direct materials PRICE variance**

**For material A**

**Direct materials USAGE variance**

**= [Standard usage – Actual usage] x Standard price**

**= [14,000 units x 2 kg – 28,500 kg] x £4**

**= [28,000 kg – 28,500 kg] x £4**

**= 500 kg (Adverse) x £4**

**= £2000 (Adverse)**

**Direct materials PRICE variance**

**= [Standard price – Actual price] x Actual quantity used**

**= [£4 x** 28,500 - £108,300]

**= [£114,000 - £108,300]**

**= £5700 [Favourable]**

**Direct materials cost variances**

**= Standard materials cost – Actual materials cost**

**= £8 per unit x 14,000 units - £**108,300]

**= £112,000 - £108,300**

**= £3,700 [F]**

**For material B**

**Direct material cost variance**

**= Standard materials cost – Actual materials cost**

**= £12 x 14,000 units - £168,000**

**= £168,000 - £168,000**

**= 0 or nil variance**

**Material Price variance**

**= [Standard price – Actual price] x Actual quantity used**

**= £3 x 56,000 kg - £168,000**

**= £168,000 - £168,000**

**= 0 or nil variance**

**Material Usage variance**

**= [Standard usage – Actual usage] x Standard price**

**= [4 kg x 14,000 units – 56,000 kg] Standard price**

**= [56,000 kg – 56,000 kg] x £3**

**= 0 or nil variance**

**Direct labour cost variance = Direct labour efficiency variance + Direct labour rate variance**

**b) From the available information suggest possible explanations for the variances identified.**