1 | General Information and Overview

Product		Risk assessor	
Product name:	Angle grinder	First name:	
Product category:	Power tools	Last name:	
Description:	This is a risk assessment template for angle grinders. It describes likely injury scenarios linked to non-conformities with the following clauses of EN 60745-2-3:2011: Clause 12 - heating Clause 20.3 - drop test Clause 20.101 - mecanical strength Clause 21.18.1 - construction How to use Users of the template should select the scenario(s) corresponding to the non-conformities identified for the product under assessment. All other scenarios can be deleted. The probabilities are estimated in the remaining scenarios. The scenarios presented in the template are likely scenarios. Users should ensure that the scenarios are suitable, that the steps are correct and that the injury level is appropriate. Disclaimer: The template has been developed by a Joint Action working group composed of market surveillance experts. The intention is to support market surveillance officials assessing the risk with a particular product as part of a market surveillance case. The template is not authorized or endorsed in any way and it is not binding for Member State market surveillance authorities. The contents of the original template is subject to change without notice. Disclaimer:	Organisation:	
		Address:	

Product	Risk assessor
This Risk Assessment Template arises from the Joint Market Surveillance Action on GPSD Products – JA2014, which received funding from the European Union in the framework of the 'Programme of Community Action in the field of Consumer Policy (2014-2020)'. The content of this document represents the views of the author only and it is his sole responsibility; it cannot be considered to reflect the views of the European Commission and/or the Consumers, Health, Agriculture and Food Executive Agency or any other body of the European Union. The European Commission and the Agency do not accept any responsibility for use that may be made of the information it contains.	

2 | Product risks - Overview

Scenario 1 :	Risk to be determined - A DIY person uses the angle grinder to grind a surface of a vessel to remove old paint from the surface. After 20 minutes of work open flames emerge from the housing of the angle grinder and burns the user's hands.
Scenario 2 :	To be determined - A DIY person is using the angle grinder. During a short break he places the grinder (still plugged into the socket outlet) on a workbench and goes away. On his way he stumbles over the cable so the angle grinder falls down on the concrete floor. The housing breaks and live parts becomes accessible. The consumer grabs the angle grinder, because the damage on the housing isn't visible. He gets a fatal electric shock.
Scenario 3 :	To be determined - A DIY user is cutting an iron pipe with an angle grinder. Half way through the pipe he wants to change position while still running the angle grinder. The grinder is twisted a little so the cutting disk blocks and breaks up into fragments that fly away. Due to the position of the angle grinder some fragments are not caught by the tool protection quard but fly away and hit the operator in the face.
Scenario 4 :	To be determined - A DIY person is grinding a workpiece with an electric handheld angle grinder. The grinder is non-compliant because it doesn't switch off the power supply if it is (temporarily) interrupted. Suddenly, the electricity supply is interrupted temporarily. The consumer examines the angle grinder trying to figure what happened, when the electricity supply is resumed and the angle grinder starts working again. The rotating disc injures the consumer.

Scenario 1 : Other consumers - Open flames

1 | Product hazard

Hazard Group: **Extreme temperatures**

Hazard Type: **Open flames**

2 | Consumer

Consumer type: **Other consumers - Consumers other than vulnerable or very vulnerable consumers**

3 | How the hazard causes an injury to the consumer

Injury scenario: **A DIY person uses the angle grinder to grind a surface of a vessel to remove old paint from the surface. After 20 minutes of work open flames emerge from the housing of the angle grinder and burns the user's hands.**

4 | Severity of Injury

Injury: **Burn/ Scald (by heat, cold, or chemical substance)**

Level: **1 1°, up to 100% of body surface, 2°, <6% of body surface**

5 | Probability of the steps to injury

Step	Step(s) to Injury	Probability
1	A person is grinding a surface of vessel with an electric handheld angle grinder.	1
2	The person uses the grinder for a long period without stops or with only small breaks.	0
3	After some time the housing of the angle grinder becomes so hot that flame emerge and burns the user's hand.	0

Calculated probability	Overall probability	Risk of this scenario
To be determined	> 1	Risk to be determined

Scenario 2 : Other consumers - High/low voltage

1 | Product hazard

Hazard Group: **Electrical energy**

Hazard Type: **High/low voltage**

2 | Consumer

Consumer type: **Other consumers - Consumers other than vulnerable or very vulnerable consumers**

3 | How the hazard causes an injury to the consumer

Injury scenario: **A DIY person is using the angle grinder. During a short break he places the grinder (still plugged into the socket outlet) on a workbench and goes away. On his way he stumbles over the cable so the angle grinder falls down on the concrete floor. The housing breaks and live parts becomes accessible. The consumer grabs the angle grinder, because the damage on the housing isn't visible. He gets a fatal electric shock.**

4 | Severity of Injury

Injury: **Electric shock**

Level: **4 Electrocution**

5 | Probability of the steps to injury

Step	Step(s) to Injury	Probability
1	A DIY consumer is using the angle grinder.	1
2	He places the grinder (still plugged into the socket outlet) on a workbench and goes away.	0
3	He stumbles over the cable which causes the angle grinder to fall down on the (concrete) floor.	0
4	The housing breaks and live parts become accessible	0
5	The user grabs the grinder and switches it on without noticing the broken house.	0
6	The user touches live parts and gets a fatal electric shock	0

Calculated probability	Overall probability	Risk of this scenario
To be determined	To be determined	Risk to be determined

Scenario 3 : Other consumers - Flying objects

1 | Product hazard

Hazard Group: **Kinetic energy**

Hazard Type: **Flying objects**

2 | Consumer

Consumer type: **Other consumers - Consumers other than vulnerable or very vulnerable consumers**

3 | How the hazard causes an injury to the consumer

Injury scenario: **A DIY user is cutting an iron pipe with an angle grinder. Half way through the pipe he wants to change position while still running the angle grinder. The grinder is twisted a little so the cutting disk blocks and breaks up into fragments that fly away. Due to the position of the angle grinder some fragments are not caught by the tool protection quard but fly away and hit the operator in the face.**

4 | Severity of Injury

Injury: **Crushing**

Level: **3 Extremities (fingers, toe, hand, foot), Elbow, Ankle, Wrist, Forearm, Leg, Shoulder, Trachea, Larynx, Pelvis**

5 | Probability of the steps to injury

Step	Step(s) to Injury	Probability
1	A DIY person is cutting an iron pipe with an angle grinder.	1
2	Half way through the pipe he wants to change position without disconnecting the angle grinder.	0
3	The grinder is twisted a little so the cutting disk blocks and breaks up into fragments that fly away.	0
4	Due to the position of the angle grinder some fragments are not caught by the tool protection quard but fly away.	0
5	Some of the flying parts hit the operator in the face.	0

Calculated probability	Overall probability	Risk of this scenario
To be determined	To be determined	Risk to be determined

Scenario 4 : Other consumers - Rotating parts

1 | Product hazard

Hazard Group: **Kinetic energy**

Hazard Type: **Rotating parts**

2 | Consumer

Consumer type: **Other consumers - Consumers other than vulnerable or very vulnerable consumers**

3 | How the hazard causes an injury to the consumer

Injury scenario: **A DIY person is grinding a workpiece with an electric handheld angle grinder. The grinder is non-compliant because it doesn't switch off the power supply if it is (temporarily) interrupted. Suddenly, the electricity supply is interrupted temporarily. The consumer examines the angle grinder trying to figure what happened, when the electricity supply is resumed and the angle grinder starts working again. The rotating disc injures the consumer.**

4 | Severity of Injury

Injury: **Laceration, cut**

Level: **2 External (deep) (>10cm long on body), (>5cm long on face) requiring stitches, Tendon or into joint, White of eye or Cornea**

5 | Probability of the steps to injury

Step	Step(s) to Injury	Probability
1	A DIY person is grinding a workpiece with an electric handheld angle grinder. The grinder is non-compliant because it doesn't switch off the power supply if it is (temporarily) interrupted.	1
2	Suddenly, the electricity supply is interrupted temporarily.	0
3	The consumer examines the angle grinder trying to figure what happened, when the electricity supply is resumed and the angle grinder starts working again.	0
4	The rotating disc injures the consumer.	0

Calculated probability	Overall probability	Risk of this scenario
To be determined	To be determined	Risk to be determined