

Ontology-based Expert System for a Generic Drug Production of Pharmaceutical Dosage Forms

Test Plan

By

Mr. Narongrit Saisuwan 542115017

Mr. Panupak Wichaidit 542115047

Department of Software Engineering
College of Arts, Media and Technology
Chiang Mai University

Project Advisor

.....

Dr. Chartchai Doungsa-ard

Document History

Document Name	Version	Status	Date	Viewable	Reviewer	Responsible
Documents						
OEGP –Test Plan_ v.0.1.docx	0.1 • UTC-01 – UTC 06	Draft	July 5, 2014	NS, PW, CD	NS, PW	NS, PW
OEGP –Test Plan _v.0.2.docx	0.2 • UTC-07-UTC-66	Draft	July 5, 2014	NS, PW, CD	NS, PW	NS, PW
OEGP –Test Plan _v.1.0.docx	1.0 • UTC-66-UTC-83	Release	July 6, 2014	NS, PW, CD	NS, PW	NS, PW

1

¹ NS – Narongrit Saisuwan , PW – Panupak Wichaidit , CD - Chartchai Doungsa-ard

Document Name	OEGP-Test Plan_V.1.0.docx	Owner	NS,PW	Page	2 / 108
Document Type	Test Plan	Release Date	July 30, 2014	Print Date	July 30, 2014

Table of Contents

Document History	2
Chapter 1 Unit Test.....	6
1.1 SolubilityServiceImpl Class.....	6
1.1.1 Unit Test Case 01 (UTC -01)	6
1.1.2 Unit Test Case 02 (UTC -02)	7
1.1.3 Unit Test Case 03 (UTC -03)	8
1.1.4 Unit Test Case 04 (UTC -04)	9
1.1.5 Unit Test Case 05 (UTC -05)	10
1.1.6 Unit Test Case 06 (UTC -06)	11
1.2 DegradationMechinismServiceimpl Class.....	12
1.2.1 Unit Test Case 07 (UTC -07)	12
1.2.2 Unit Test Case 08 (UTC -08)	13
1.2.3 Unit Test Case 09 (UTC -09)	14
1.2.4 Unit Test Case 10 (UTC -10)	15
1.2.5 Unit Test Case 11 (UTC -11)	16
1.2.6 Unit Test Case 12 (UTC -12)	17
1.3 KineticReactionServiceimpl Class.....	18
1.3.1 Unit Test Case 13 (UTC -13)	18
1.3.2 Unit Test Case 14 (UTC -14)	19
1.3.3 Unit Test Case 15 (UTC -15)	20
1.3.4 Unit Test Case 16 (UTC -16)	21
1.3.5 Unit Test Case 17 (UTC -17)	22
1.3.6 Unit Test Case 18 (UTC -18)	23
1.4 PkaServiceImpl Class.....	24
1.4.1 Unit Test Case 19 (UTC -19)	24
1.4.2 Unit Test Case 20 (UTC -20)	25
1.4.3 Unit Test Case 21 (UTC -21)	26
1.4.4 Unit Test Case 22 (UTC -22)	27
1.4.5 Unit Test Case 23 (UTC -23)	28
1.4.6 Unit Test Case 24 (UTC -24)	29
1.5 PartitionCoefficientServiceimpl Class	30
1.5.1 Unit Test Case 25 (UTC -25)	30
1.5.2 Unit Test Case 26 (UTC -26)	31

Document Name	OEGP-Test Plan_V.1.0.docx	Owner	NS,PW	Page	3 / 108
Document Type	Test Plan	Release Date	July 30, 2014	Print Date	July 30, 2014

1.5.3	Unit Test Case 27 (UTC -27)	32
1.5.4	Unit Test Case 28 (UTC -28)	33
1.5.5	Unit Test Case 29 (UTC -29)	34
1.5.6	Unit Test Case 30 (UTC -30)	35
1.6	SolidstateServiceimpl Class.....	36
1.6.1	Unit Test Case 31 (UTC -31)	36
1.6.2	Unit Test Case 32 (UTC -32)	37
1.6.3	Unit Test Case 33 (UTC -33)	38
1.6.4	Unit Test Case 34 (UTC -34)	39
1.6.5	Unit Test Case 35 (UTC -35)	40
1.6.6	Unit Test Case 36 (UTC -36)	41
1.7	HygroscopicityServiceimpl Class	42
1.7.1	Unit Test Case 37 (UTC -37)	42
1.7.2	Unit Test Case 38 (UTC -38)	43
1.7.3	Unit Test Case 39(UTC -39)	44
1.7.4	Unit Test Case 40 (UTC -40)	45
1.7.5	Unit Test Case 41 (UTC -41)	46
1.7.6	Unit Test Case 42 (UTC -42)	47
1.8	ParticleSizeServiceImpl Class	48
1.8.1	Unit Test Case 43 (UTC -43)	48
1.8.2	Unit Test Case 44 (UTC -44)	49
1.8.3	Unit Test Case 45 (UTC -45)	50
1.8.4	Unit Test Case 46 (UTC -46)	51
1.8.5	Unit Test Case 47 (UTC -47)	52
1.8.6	Unit Test Case 48 (UTC -48)	53
1.9	FlowabilityServiceimpl Class	54
1.9.1	Unit Test Case 49 (UTC -49)	54
1.9.2	Unit Test Case 50 (UTC -50)	55
1.9.3	Unit Test Case 51(UTC -51)	56
1.9.4	Unit Test Case 52 (UTC -52)	57
1.9.5	Unit Test Case 53 (UTC -53)	58
1.9.6	Unit Test Case 54 (UTC -54)	59
1.10	DensityServiceimpl Class.....	60
1.10.1	Unit Test Case 55 (UTC -55)	60

Document Name	OEGP-Test Plan_V.1.0.docx	Owner	NS,PW	Page	4 / 108
Document Type	Test Plan	Release Date	July 30, 2014	Print Date	July 30, 2014

1.10.2	Unit Test Case 56 (UTC -56)	61
1.10.3	Unit Test Case 57 (UTC -57)	62
1.10.4	Unit Test Case 58 (UTC -58)	63
1.10.5	Unit Test Case 59 (UTC -59)	64
1.10.6	Unit Test Case 60 (UTC -60)	65
1.11	CompoundFunction Class	66
1.11.1	Unit Test Case 61 (UTC -61)	66
1.11.2	Unit Test Case 62 (UTC -62)	67
1.11.3	Unit Test Case 63 (UTC -63)	68
1.11.4	Unit Test Case 64 (UTC -64)	69
1.11.5	Unit Test Case 65 (UTC -65)	70
1.11.6	Unit Test Case 66 (UTC -66)	71
1.12	SubstanceServiceImpl Class	72
1.12.1	Unit Test Case 67 (UTC -67)	77
1.12.2	Unit Test Case 68 (UTC -68)	78
1.12.3	Unit Test Case 69 (UTC -69)	79
1.12.4	Unit Test Case 70 (UTC -70)	80
1.12.5	Unit Test Case 71 (UTC -71)	81
1.12.6	Unit Test Case 72 (UTC -72)	82
1.13	ExcipientServiceImpl Class	83
1.13.1	Unit Test Case 73 (UTC -73)	83
1.13.2	Unit Test Case 74 (UTC -74)	85
1.13.3	Unit Test Case 75 (UTC -75)	87
1.13.4	Unit Test Case 76 (UTC -76)	89
1.13.5	Unit Test Case 77 (UTC -77)	90
1.14	TabletFormulationServiceImpl Class	92
1.14.1	Unit Test Case 78 (UTC -78)	92
1.14.2	Unit Test Case 79 (UTC -79)	95
1.14.3	Unit Test Case 80 (UTC -80)	98
1.14.4	Unit Test Case 81 (UTC -81)	101
1.14.5	Unit Test Case 82 (UTC -82)	103
1.14.6	Unit Test Case 83 (UTC -83)	106

Document Name	OEGP-Test Plan_V.1.0.docx	Owner	NS,PW	Page	5 / 108
Document Type	Test Plan	Release Date	July 30, 2014	Print Date	July 30, 2014

Chapter | 1 Unit Test

1.1 SolubilityServiceImpl Class

1.1.1 Unit Test Case 01 (UTC -01)

add(Solubility solubility): Solubility

Test data

Object Name	ID	Type	MaxValue	MinValue	SolubilityValue
Solubility1	1	"solubility1"	4	2	5
Solubility2	2	"solubility2"	7	1	3

Test Case

Case No.	Description	Input data					Expect Result				
		Id	Type	MaxValue	MinValue	SolubilityValue	Id	Type	MaxValue	MinValue	SolubilityValue
1	Test add solubility object which is correct the formal of solubility object.	null	"solubility3"	4	4	2	Not null	"solubility3"	4	4	2
2	Test add solubility object which is correct the formal of solubility object.	null	"solubility4"	6	3	6	Not null	"solubility4"	6	3	6
3	Test add solubility object which is contained in the database already.	1	"solubility1"	4	2	5	null	null	null	null	Null
4	Test add solubility object which is contained in the database already.	2	"solubility2"	7	1	3	null	null	null	null	null

Document Name	OEGP-Test Plan_V.1.0.docx	Owner	NS,PW	Page	6 / 108
Document Type	Test Plan	Release Date	July 30, 2014	Print Date	July 30, 2014

1.1.2 Unit Test Case 02 (UTC -02)

update(Solubility solubility): Solubility

Test data

Object Name	ID	Type	MaxValue	MinValue	SolubilityValue
Solubility1	1	"solubility1"	4	2	5
Solubility2	2	"solubility2"	7	1	3

Test Case

Case No.	Description	Input data					Expect Result				
		Id	Type	MaxValue	MinValue	SolubilityValue	Id	Type	MaxValue	MinValue	SolubilityValue
1	Test update solubility object which is correct the formal of solubility object and and contained in the database.	1	"solubility1"	6	4	3	1	"solubility1"	6	4	3
2	Test update solubility object which is correct the formal of solubility object and and contained in the database.	2	"solubility2"	7	3	10	2	"solubility2"	7	3	10
3	Test update solubility object which is not contained in the database.	3	"solubility3"	2	1	3	null	null	null	null	null
4	Test update solubility object which is not contained in the database.	4	"solubility4"	3	2	5	null	null	null	null	null

Document Name	OEGP-Test Plan_V.1.0.docx	Owner	NS,PW	Page	7 / 108
Document Type	Test Plan	Release Date	July 30, 2014	Print Date	July 30, 2014

1.1.3 Unit Test Case 03 (UTC -03)

delete(Solubility solubility): Solubility

Test data

Object Name	ID	Type	MaxValue	MinValue	SolubilityValue
Solubility1	1	"solubility1"	4	2	5
Solubility2	2	"solubility2"	7	1	3

Test Case

Case No.	Description	Input data					Expect Result				
		Id	Type	MaxValue	MinValue	SolubilityValue	Id	Type	MaxValue	MinValue	SolubilityValue
1	Test delete solubility object which is contained in database and correct format solubility object.	1	"solubility1"	4	2	5	Null	"solubility1"	4	2	5
2	Test delete solubility object which is contained in database and correct format solubility object.	2	"solubility2"	7	3	10	null	"solubility2"	7	1	3
3	Test delete solubility object which is not contained in database or incorrect format solubility object.	3	"solubility3"	4	1	3	null	null	null	null	Null
4	Test delete solubility object which is not contained in database or incorrect format solubility object.	4	"solubility4"	3	2	6	null	null	null	null	null

Document Name	OEGP-Test Plan_V.1.0.docx	Owner	NS,PW	Page	8 / 108
Document Type	Test Plan	Release Date	July 30, 2014	Print Date	July 30, 2014

1.1.4 Unit Test Case 04 (UTC -04)

findAll():Solubility []

Test data

Object Name	ID	Type	MaxValue	MinValue	SolubilityValue
Solubility1	1	"solubility1"	4	2	5
Solubility2	2	"solubility2"	7	1	3

Test Plan

case	Description	Expect result
		List of solubility object
1	Test get all solubility list	{ Solubility1, Solubility2}

Document Name	OEGP-Test Plan_V.1.0.docx	Owner	NS,PW	Page	9 / 108
Document Type	Test Plan	Release Date	July 30, 2014	Print Date	July 30, 2014

1.1.5 Unit Test Case 05 (UTC -05)

findById(long id):Solubility

Test data

Object Name	ID	Type	MaxValue	MinValue	SolubilityValue
Solubility1	1	"solubility1"	4	2	5
Solubility2	2	"solubility2"	7	1	3

Test Case

Case No.	Description	Input data	Expect Result				
		Id	Id	Type	MaxValue	MinValue	SolubilityValue
1	Test get solubility object which is contained in database by solubility id.	1	1	"solubility1"	4	2	5
2	Test get solubility object which is contained in database by solubility id.	2	2	"solubility2"	7	1	3
3	Test get solubility object which is not contain in database by solubility id.	3	null	Null	Null	Null	Null
4	Test get solubility object which is not contain by solubility id in database.	4	null	Null	Null	Null	Null

Document Name	OEGP-Test Plan_V.1.0.docx	Owner	NS,PW	Page	10 / 108
Document Type	Test Plan	Release Date	July 30, 2014	Print Date	July 30, 2014

1.1.6 Unit Test Case 06 (UTC -06)

findByType(String type):Solubility

Test data

Object Name	ID	Type	MaxValue	MinValue	SolubilityValue
Solubility1	1	"solubility1"	4	2	5
Solubility2	2	"solubility2"	7	1	3

Test Case

Case No.	Description	Input data	Expect Result				
		Solubility Type	Id	Type	MaxValue	MinValue	SolubilityValue
1	Test get solubility object which is contained in the database by solubility type.	"solubility1"	1	"solubility1"	4	2	5
2	Test get solubility object which is contained in the database by solubility type.	"solubility2"	2	"solubility2"	7	1	3
3	Test get solubility object which is not contain in database by solubility type.	"solubility3"	Null	Null	Null	Null	Null
4	Test get solubility object which is not contain in database by solubility type.	"solubility4"	Null	Null	Null	Null	Null

Document Name	OEGP-Test Plan_V.1.0.docx	Owner	NS,PW	Page	11 / 108
Document Type	Test Plan	Release Date	July 30, 2014	Print Date	July 30, 2014

1.2 DegradationMechinismServiceimpl Class

1.2.1 Unit Test Case 07 (UTC -07)

add(DegradationMechinism degradationMechinism): DegradationMechinism

Test data

Object Name	ID	Type
DegradationMechinism1	1	"degradationMechinism1"
DegradationMechinism2	2	"degradationMechinism2"

Test Case

Case No.	Description	Input data		Expect Result	
		Id	Type	Id	Type
1	Test adddegradationMechinism object which is correct the formal of degradationMechinism object.	null	"degradationMechinism3"	Not null	"degradationMechinism3"
2	Test add degradationMechinismobject which is correct the formal of degradationMechinism object.	null	"degradationMechinism4"	Not null	"degradationMechinism4"
3	Test add degradationMechinism object which is contained in the database already.	1	"degradationMechinism1"	null	Null
4	Test add degradationMechinism object which is contained in the database already.	2	"degradationMechinism2"	null	Null

Document Name	OEGP-Test Plan_V.1.0.docx	Owner	NS,PW	Page	12 / 108
Document Type	Test Plan	Release Date	July 30, 2014	Print Date	July 30, 2014

1.2.2 Unit Test Case 08 (UTC -08)

update(DegradationMechinism degradationMechinism):DegradationMechinism

Test data

Object Name	ID	Type
DegradationMechinism1	1	"degradationMechinism1"
DegradationMechinism2	2	"degradationMechinism2"

Test Case

Case No.	Description	Input data		Expect Result	
		Id	Type	Id	Type
1	Test update degradationMechinism object which is correct the formal of degradationMechinism object and contained in the database.	1	"degradationMechanismTest1"	1	"degradationMechanismTest1"
2	Test update degradationMechinism object which is correct the formal of degradationMechinism object and contained in the database.	2	"degradationMechanismTest2"	2	"degradationMechanismTest2"
3	Test update degradationMechinism object which is not contained in the database.	3	"degradationMechanismTest3"	null	Null
4	Test update degradationMechinism object which is not contained in the database.	4	"degradationMechanismTest4"	null	Null

Document Name	OEGP-Test Plan_V.1.0.docx	Owner	NS,PW	Page	13 / 108
Document Type	Test Plan	Release Date	July 30, 2014	Print Date	July 30, 2014

1.2.3 Unit Test Case 09 (UTC -09)

Delete(DegradationMechinism degradationMechinism): DegradationMechinism

Test data

Object Name	ID	Type
DegradationMechinism1	1	"degradationMechinism1"
DegradationMechinism2	2	"degradationMechinism2"

Test Case

Case No.	Description	Input data		Expect Result	
		Id	Type	Id	Type
1	Test delete degradationMechinism object which is contained in database and correct format degradationMechinism object.	1	"degradationMechinism1"	Null	"degradationMechinism1"
2	Test delete degradationMechinism object which is contained in database and correct format degradationMechinism object.	2	"degradationMechinism2"	null	"degradationMechinism2"
3	Test delete degradationMechinism object which is not contained in database or incorrect format degradationMechinism object.	3	"degradationMechinism3"	null	Null
4	Test delete degradationMechinism object which is not contained in database or incorrect format degradationMechinism object.	4	"degradationMechinism4"	null	Null

Document Name	OEGP-Test Plan_V.1.0.docx	Owner	NS,PW	Page	14 / 108
Document Type	Test Plan	Release Date	July 30, 2014	Print Date	July 30, 2014

1.2.4 Unit Test Case 10 (UTC -10)

findAll():degradationMechinism []

Test data

Object Name	ID	Type
DegradationMechinism1	1"	"degradationMechinism1"
DegradationMechinism2	2	"degradationMechinism2"

Test Case

case	Description	Expect result
		List of degradationMechinism object
1	Test get all degradationMechinism list.	{DegradationMechinism1,DegradationMechinism2}

Document Name	OEGP-Test Plan_V.1.0.docx	Owner	NS,PW	Page	15 / 108
Document Type	Test Plan	Release Date	July 30, 2014	Print Date	July 30, 2014

1.2.5 Unit Test Case 11 (UTC -11)

findById(long id):degradationMechinism

Test data

Object Name	ID	Type
DegradationMechinism1	1	"degradationMechinism1"
DegradationMechinism2	2	"degradationMechinism2"

Test Case

case	Description	Input	Expect result	
		Id	Id	Type
1	Test get degradationMechinism object by degradationMechinism id .	1	1	"degradationMechanism1"
2	Test get degradationMechinism object by degradationMechinism id.	2	2	"degradationMechanism2"
3	Test get degradationMechinism object which is not contain in database.	3	null	Null
4	Test get degradationMechinism object which is not contain in database.	4	null	null

Document Name	OEGP-Test Plan_V.1.0.docx	Owner	NS,PW	Page	16 / 108
Document Type	Test Plan	Release Date	July 30, 2014	Print Date	July 30, 2014

1.2.6 Unit Test Case 12 (UTC -12)

findByType(String type):degradationMechinism

Test data

Object Name	ID	Type
DegradationMechinism1	1	"degradationMechinism1"
DegradationMechinism2	2	"degradationMechinism2"

Test Case

case	Description	Input	Expect result	
		type	Id	Type
1	Test get degradationMechinism object by degradationMechinism type.	"degradationMechanism1"	1	"degradationMechanism1"
2	Test get degradationMechinism object by degradationMechinism type.	"degradationMechanism2"	2	"degradationMechanism2"
3	Test get degradationMechinism object which is not contain in database.	"degradationMechanism3"	null	
4	Test get degradationMechinism object which is not contain in database.	"degradationMechanism4"	null	

Document Name	OEGP-Test Plan_V.1.0.docx	Owner	NS,PW	Page	17 / 108
Document Type	Test Plan	Release Date	July 30, 2014	Print Date	July 30, 2014

1.3 KineticReactionServiceImpl Class

1.3.1 Unit Test Case 13 (UTC -13)

add(KineticReaction kineticReaction): KineticReaction

Test data

Object Name	ID	Type
KineticReaction1	1	"kineticReaction1"
KineticReaction2	2	"kineticReaction2"

Test Case

Case No.	Description	Input data		Expect Result	
		Id	Type	Id	Type
1	Test add kineticReaction object which is correct the formal of kineticReaction object.	null	"kineticReaction3"	Not null	"kineticReaction3"
2	Test add kineticReaction object which is correct the formal of kineticReaction object.	null	"kineticReaction4"	Not null	"kineticReaction4"
3	Test add kineticReaction object which is contained in the database already.	1	"kineticReaction1"	null	
4	Test add kineticReaction object which is contained in the database already.	2	"kineticReaction2"	null	

Document Name	OEGP-Test Plan_V.1.0.docx	Owner	NS,PW	Page	18 / 108
Document Type	Test Plan	Release Date	July 30, 2014	Print Date	July 30, 2014

1.3.2 Unit Test Case 14 (UTC -14)

update(KineticReaction kineticReaction): KineticReaction

Test data

Object Name	ID	Type
KineticReaction1	1	"kineticReaction1"
KineticReaction2	2	"kineticReaction2"

Test Case

Case No.	Description	Input data		Expect Result	
		Id	Type	Id	Type
1	Test update kineticReaction object which is correct the formal of kineticReaction object.	1	"kineticReactionTest1"	1	"kineticReactionTest1"
2	Test update kineticReaction object which is correct the formal of kineticReaction object.	2	"kineticReactionTest2"	2	"kineticReactionTest2"
3	Test update kineticReaction object which is not contained in the database.	3	"kineticReaction3"	null	
4	Test update kineticReaction object which is not contained in the database.	4	"kineticReaction4"	null	

Document Name	OEGP-Test Plan_V.1.0.docx	Owner	NS,PW	Page	19 / 108
Document Type	Test Plan	Release Date	July 30, 2014	Print Date	July 30, 2014

1.3.3 Unit Test Case 15 (UTC -15)

Delete(KineticReaction kineticReaction): KineticReaction

Test data

Object Name	ID	Type
KineticReaction1	1	"kineticReaction1"
KineticReaction2	2	"kineticReaction2"

Test Case

Case No.	Description	Input data		Expect Result	
		Id	Type	Id	Type
1	Test delete kineticReaction object which is contained in database and correct format kineticReaction object.	1	"kineticReaction1"	Null	"kineticReaction1"
2	Test delete kineticReaction object which is contained in database and correct format kineticReaction object.	2	"kineticReaction2"	Null	"kineticReaction2"
3	Test delete kineticReaction object which is not contained in database or incorrect format kineticReaction object.	3	"kineticReaction3"	null	Null
4	Test delete kineticReaction object which is not contained in database or incorrect format kineticReaction object.	4	"kineticReaction4"	null	null

Document Name	OEGP-Test Plan_V.1.0.docx	Owner	NS,PW	Page	20 / 108
Document Type	Test Plan	Release Date	July 30, 2014	Print Date	July 30, 2014

1.3.4 Unit Test Case 16 (UTC -16)

findAll():KineticReaction []

Test data

Object Name	ID	Type
KineticReaction1	1	"kineticReaction1"
KineticReaction2	2	"kineticReaction2"

Test Case

case	Description	Expect result
		List of kineticReaction object
1	Test get all kineticReaction object list.	{KineticReaction1,KineticReaction2}

Document Name	OEGP-Test Plan_V.1.0.docx	Owner	NS,PW	Page	21 / 108
Document Type	Test Plan	Release Date	July 30, 2014	Print Date	July 30, 2014

1.3.5 Unit Test Case 17 (UTC -17)

findById(long id): KineticReaction

Test data

Object Name	ID	Type
KineticReaction1	1	"kineticReaction1"
KineticReaction2	2	"kineticReaction2"

Test Case

case	Description	Input	Expect result	
		Id	Id	Type
1	Test get kineticReaction object by kineticReaction id .	1	1	"kineticReaction1"
2	Test get kineticReaction object by kineticReaction id.	2	2	"kineticReaction2"
3	Test get kineticReaction object which is not contain in database.	3	null	
4	Test get object kineticReaction which is not contain in database.	4	null	

Document Name	OEGP-Test Plan_V.1.0.docx	Owner	NS,PW	Page	22 / 108
Document Type	Test Plan	Release Date	July 30, 2014	Print Date	July 30, 2014

1.3.6 Unit Test Case 18 (UTC -18)

findByType(String type): KineticReaction

Test data

Object Name	ID	Type
KineticReaction1	1	"kineticReaction1"
KineticReaction2	2	"kineticReaction2"

Test Case

case	Description	Input	Expect result	
		Type	Id	Type
1	Test get kineticReaction object by kineticReaction type.	"kineticReaction1"	1	"kineticReaction1"
2	Test get kineticReaction object by kineticReaction type.	"kineticReaction2"	2	"kineticReaction2"
3	Test get kineticReaction object which is not contain in database.	"kineticReaction3"	Null	Null
4	Test get kineticReaction object which is not contain in database.	"kineticReaction4"	Null	Null

Document Name	OEGP-Test Plan_V.1.0.docx	Owner	NS,PW	Page	23 / 108
Document Type	Test Plan	Release Date	July 30, 2014	Print Date	July 30, 2014

1.4 PkaServiceImpl Class

1.4.1 Unit Test Case 19 (UTC -19)

add(Pka pka): Pka

Test data

Object Name	ID	Type	MaxValue	MinValue	PkaValue
Pka1	1	"pka1"	4	2	5
Pka2	2	"pka2"	7	1	3

Test Case

Case No.	Description	Input data					Expect Result				
		Id	Type	MaxValue	MinValue	PkaValue	Id	Type	MaxValue	MinValue	PkaValue
1	Test add pka object which is correct the formal of pka object.	null	"pka3"	4	4	2	Not null	"pka3"	4	4	2
2	Test add pka object which is correct the formal of pka object.	null	"pka4"	6	3	6	Not null	"pka4"	6	3	6
3	Test add pka object which is contained in the database already .	1	"pka1"	4	2	5	null	null	null	null	null
4	Test add pka object which is contained in the database already.	2	"pka2"	7	1	3	null	null	null	null	null

Document Name	OEGP-Test Plan_V.1.0.docx	Owner	NS,PW	Page	24 / 108
Document Type	Test Plan	Release Date	July 30, 2014	Print Date	July 30, 2014

1.4.2 Unit Test Case 20 (UTC -20)

update(Pka pka):Pka

Test data

Object Name	ID	Type	MaxValue	MinValue	PkaValue
Pka1	1	"pka1"	4	2	5
Pka2	2	"pka2"	7	1	3

Test Case

Case No.	Description	Input data					Expect Result				
		Id	Type	MaxValue	MinValue	PkaValue	Id	Type	MaxValue	MinValue	PkaValue
1	Test update pka object which is correct the formal of pka object and contained in the database.	1	"pka1"	4	1	5	1	"pka1"	4	1	5
2	Test update pka object which is correct the formal of pka object and contained in the database.	2	"pka2"	7	3	10	2	"pka2"	7	3	10
3	Test update pka object which is not contained in the database.	3	"pka3"	2	1	3	null				
4	Test update pka object which is not contained in the database.	4	"pka4"	3	2	5	null				

Document Name	OEGP-Test Plan_V.1.0.docx	Owner	NS,PW	Page	25 / 108
Document Type	Test Plan	Release Date	July 30, 2014	Print Date	July 30, 2014

1.4.3 Unit Test Case 21 (UTC -21)

delete(Pka pka):Pka

Test data

Object Name	ID	Type	MaxValue	MinValue	PkaValue
Pka1	1	"pka1"	4	2	5
Pka2	2	"pka2"	7	1	3

Test Case

Case No.	Description	Input data					Expect Result				
		Id	Type	MaxValue	MinValue	PkaValue	Id	Type	MaxValue	MinValue	PkaValue
1	Test delete pka object which is contained in database and correct format Pka object.	1	"pka1"	4	2	5	Null	"pka1"	4	2	5
2	Test delete pka object which is contained in database and correct format pka object.	2	"pka2"	7	1	3	Null	"pka2"	7	1	3
3	Test delete pka object which is not contained in database or incorrect format pka object.	3	"pka3"	4	1	3	null	Null	Null	Null	Null
4	Test delete pka object which is not contained in database or incorrect format pka object.	4	"pka4"	3	2	6	null	Null	Null	Null	Null

Document Name	OEGP-Test Plan_V.1.0.docx	Owner	NS,PW	Page	26 / 108
Document Type	Test Plan	Release Date	July 30, 2014	Print Date	July 30, 2014

1.4.4 Unit Test Case 22 (UTC -22)

findAll():Pka []

Test data

Object Name	ID	Type	MaxValue	MinValue	PkaValue
Pka1	1	"pka1"	4	2	5
Pka2	2	"pka2"	7	1	3

Test Plan

case	Description	Expect result
		List of pka object
1	Test get all pka list.	{Pka1,Pka2}

Document Name	OEGP-Test Plan_V.1.0.docx	Owner	NS,PW	Page	27 / 108
Document Type	Test Plan	Release Date	July 30, 2014	Print Date	July 30, 2014

1.4.5 Unit Test Case 23 (UTC -23)

findById(long id):Pka

Test data

Object Name	ID	Type	MaxValue	MinValue	PkaValue
Pka1	1	"pka1"	4	2	5
Pka2	2	"pka2"	7	1	3

Test Case

Case No.	Description	Input data	Expect Result				
		Id	Id	Type	MaxValue	MinValue	PkaValue
1	Test get pka object by pka id .	1	1	"pka1"	4	2	5
2	Test get pka object by pka id.	2	2	"pka2"	7	1	3
3	Test get pka object which is not contain in database.	3	Null	Null	Null	Null	Null
4	Test get pka object which is not contain in database.	4	Null	Null	Null	Null	Null

Document Name	OEGP-Test Plan_V.1.0.docx	Owner	NS,PW	Page	28 / 108
Document Type	Test Plan	Release Date	July 30, 2014	Print Date	July 30, 2014

1.4.6 Unit Test Case 24 (UTC -24)

findByType(String type):Pka

Test data

Object Name	ID	Type	MaxValue	MinValue	PkaValue
Pka1	1	"pka1"	4	2	5
Pka2	2	"pka2"	7	1	3

Test Case

Case No.	Description	Input data	Expect Result				
		Pka Type	Id	Type	MaxValue	MinValue	PkaValue
1	Test get pka object by pka type.	"pka1"	1	"pka1"	4	2	5
2	Test get pka object by pka type.	"pka2"	2	"pka2"	7	1	3
3	Test get pka object which is not contain in database.	"pka3"	null				
4	Test get pka object which is not contain in database.	"pka4"	null				

Document Name	OEGP-Test Plan_V.1.0.docx	Owner	NS,PW	Page	29 / 108
Document Type	Test Plan	Release Date	July 30, 2014	Print Date	July 30, 2014

1.5 PartitionCoefficientServiceimpl Class

1.5.1 Unit Test Case 25 (UTC -25)

add(PartitionCoefficient partitionCoefficient): PartitionCoefficient

Test data

Object Name	ID	Type	PartitionCoefficientValue
PartitionCoefficient1	1	"partitionCoefficient1"	5
PartitionCoefficient2	2	"partitionCoefficient2"	3

Test Case

Case No.	Description	Input data			Expect Result		
		Id	Type	Value	Id	Type	Value
1	Test add partitionCoefficient object which is correct the formal of partitionCoefficient object.	null	"partitionCoefficient3"	2	Not null	"partitionCoefficient3 "	2
2	Test add partitionCoefficient object which is correct the formal of partitionCoefficient object.	null	"partitionCoefficient4"	6	Not null	"partitionCoefficient4"	6
3	Test add partitionCoefficient object which is contained in the database already.	1	"partitionCoefficient1 "	5	Null		
4	Test add partitionCoefficient object which is contained in the database already.	2	"partitionCoefficient2"	3	Null		

Document Name	OEGP-Test Plan_V.1.0.docx	Owner	NS,PW	Page	30 / 108
Document Type	Test Plan	Release Date	July 30, 2014	Print Date	July 30, 2014

1.5.2 Unit Test Case 26 (UTC -26)

update(PartitionCoefficient partitionCoefficient): PartitionCoefficient

Test data

Object Name	ID	Type	PartitionCoefficientValue
PartitionCoefficient1	1	"partitionCoefficient1"	5
PartitionCoefficient2	2	"partitionCoefficient2"	3

Test Case

Case No.	Description	Input data			Expect Result		
		Id	Type	Value	Id	Type	Value
1	Test update partitionCoefficient object which is correct the formal of partitionCoefficient object and contained in the database.	1	"partitionCoefficient1"	2	1	"partitionCoefficient"	2
2	Test update partitionCoefficient object which is correct the formal of partitionCoefficient object and contained in the database.	2	"partitionCoefficient2"	6	2	"partitionCoefficient"	6
3	Test update partitionCoefficient object which is not contained in the database.	3	"partitionCoefficient3"	3	null	Null	Null
4	Test update partitionCoefficient object which is not contained in the database.	4	"partitionCoefficient4"	5	null	Null	Null

Document Name	OEGP-Test Plan_V.1.0.docx	Owner	NS,PW	Page	31 / 108
Document Type	Test Plan	Release Date	July 30, 2014	Print Date	July 30, 2014

1.5.3 Unit Test Case 27 (UTC -27)

Delete(PartitionCoefficient partitionCoefficient): PartitionCoefficient

Test data

Object Name	ID	Type	PartitionCoefficientValue
PartitionCoefficient1	1	"partitionCoefficient1"	5
PartitionCoefficient2	2	"partitionCoefficient2"	3

Test Case

Case No.	Description	Input data			Expect Result		
		Id	Type	Value	Id	Type	Value
1	Test delete partitionCoefficient object which is contained in database and correct format partitionCoefficient object.	1	"partitionCoefficient1"	5	Null	"partitionCoefficient1"	5
2	Test delete partitionCoefficient object which is contained in database and correct format partitionCoefficient object.	2	"partitionCoefficient2"	3	Null	"partitionCoefficient2"	3
3	Test delete partitionCoefficient object which is not contained in database or incorrect format partitionCoefficient object.	3	"partitionCoefficient 3"	3	null	Null	Null
4	Test delete partitionCoefficient object which is not contained in database or incorrect format partitionCoefficient object.	4	"partitionCoefficient 4"	6	null	Null	Null

Document Name	OEGP-Test Plan_V.1.0.docx	Owner	NS,PW	Page	32 / 108
Document Type	Test Plan	Release Date	July 30, 2014	Print Date	July 30, 2014

1.5.4 Unit Test Case 28 (UTC -28)

findAll():partitionCoefficient []

Test data

Object Name	ID	Type	PartitionCoefficientValue
PartitionCoefficient1	1	"partitionCoefficient1"	5
PartitionCoefficient2	2	"partitionCoefficien2"	3

Test Case

case	Description	Expect result
		List of pka object
1	Test get all PartitionCoefficient list	{PartitionCoefficient1, PartitionCoefficient2}

Document Name	OEGP-Test Plan_V.1.0.docx	Owner	NS,PW	Page	33 / 108
Document Type	Test Plan	Release Date	July 30, 2014	Print Date	July 30, 2014

1.5.5 Unit Test Case 29 (UTC -29)

findByld(long id): PartitionCoefficient

Test data

Object Name	ID	Type	PartitionCoefficientValue
PartitionCoefficient1	1	"partitionCoefficient1"	5
PartitionCoefficient2	2	"partitionCoefficien2"	3

Test Case

case	Description	Input	Expect result		
		Id	Id	Type	Value
1	Test get partitionCoefficient object by partitionCoefficient id.	1	1	"partitionCoefficient1"	5
2	Test get partitionCoefficient object by partitionCoefficient id.	2	2	"partitionCoefficient2"	3
3	Test get partitionCoefficient object which is not contain in database.	3	null	Null	Null
4	Test get partitionCoefficient object which is not contain in database.	4	null	Null	Null

Document Name	OEGP-Test Plan_V.1.0.docx	Owner	NS,PW	Page	34 / 108
Document Type	Test Plan	Release Date	July 30, 2014	Print Date	July 30, 2014

1.5.6 Unit Test Case 30 (UTC -30)

findByType(String type): PartitionCoefficient

Test data

Object Name	ID	Type	PartitionCoefficientValue
PartitionCoefficient1	1	"partitionCoefficient1"	5
PartitionCoefficient2	2	"partitionCoefficien2"	3

Test Case

case	Description	Input	Expect result	
		Type	Id	Type
1	Test get partitionCoefficient object by PartitionCoefficient type.	"partitionCoefficient1"	1	"partitionCoefficient1"
2	Test get partitionCoefficient object by partitionCoefficient type.	"partitionCoefficient2"	2	"partitionCoefficient2"
3	Test get partitionCoefficient object which is not contain in database.	"partitionCoefficient3"	null	
4	Test get partitionCoefficient object which is not contain in database.	"partitionCoefficient4"	null	

Document Name	OEGP-Test Plan_V.1.0.docx	Owner	NS,PW	Page	35 / 108
Document Type	Test Plan	Release Date	July 30, 2014	Print Date	July 30, 2014

1.6 SolidstateServiceimpl Class

1.6.1 Unit Test Case 31 (UTC -31)

add(Solidstate solidstate): Solidstate

Test data

Object Name	ID	Type
Solidsatate1	1	"solidsatate1"
Solidsatate2	2	"solidsatate2"

Test Case

Case No.	Description	Input data		Expect Result	
		Id	Type	Id	Type
1	Test add solidstate object which is correct the formal of solidsatate object .	null	"solidstate3"	Not null	"solidstate3"
2	Test add solidstate object which is correct the formal of Solidsatate object.	null	"solidstate4"	Not Null	"solidstate4"
3	Test add solidstate object which is contained in the database already.	1	"solidstate1"	null	
4	Test add solidstate object which is contained in the database already.	2	"solidstate2"	null	

Document Name	OEGP-Test Plan_V.1.0.docx	Owner	NS,PW	Page	36 / 108
Document Type	Test Plan	Release Date	July 30, 2014	Print Date	July 30, 2014

1.6.2 Unit Test Case 32 (UTC -32)
update(Solidstate solidstate): Solidstate

Test data

Object Name	ID	Type
Solidsatate1	1	"solidsatate1"
Solidsatate2	2	"solidsatate2"

Test Case

Case No.	Description	Input data		Expect Result	
		Id	Type	Id	Type
1	Test update solidstate object which is correct the formal of solidstate object and and contained in the database.	1	"solidstateTest1"	1	"solidstateTest1"
2	Test update solidastate object which is correct the formal of solidstate object and and contained in the database.	2	"solidstateTest2"	2	"solidstateTest2"
3	Test update solidstate object which is not contained in the database.	3	"solidstateTest3"	null	
4	Test update solidstate object which is not contained in the database.	4	"solidstateTest4"	null	

Document Name	OEGP-Test Plan_V.1.0.docx	Owner	NS,PW	Page	37 / 108
Document Type	Test Plan	Release Date	July 30, 2014	Print Date	July 30, 2014

1.6.3 Unit Test Case 33 (UTC -33)

Delete(Solidstate solidstate): Solidstate

Test data

Object Name	ID	Type
Solidsatate1	1	"solidsatate1"
Solidsatate2	2	"solidsatate2"

Test Case

Case No.	Description	Input data		Expect Result	
		Id	Type	Id	Type
1	Test delete solidstate object which is contained in database and correct format solidstate object.	1	"solidsatate1"	Null	"solidsatate1"
2	Test delete solidstate object which is contained in database and correct format solidstate object.	2	"solidsatate2"	Null	"solidsatate2"
3	Test delete solidstate object which is not contained in database or incorrect format solidstate object.	3	"solidsatate3"	null	Null
4	Test delete solidstate object which is not contained in database or incorrect format solidstate object.	4	"solidsatate4"	null	null

Document Name	OEGP-Test Plan_V.1.0.docx	Owner	NS,PW	Page	38 / 108
Document Type	Test Plan	Release Date	July 30, 2014	Print Date	July 30, 2014

1.6.4 Unit Test Case 34 (UTC -34)

findAll():Solidstate []

Test data

Object Name	ID	Type
Solidsatate1	1	"solidsatate1"
Solidsatate2	2	"solidsatate2"

Test Case

case	Description	Expect result
		List of solidstate object
1	Test get all solidstate list	{Solidsatate1,Solidstate2}

Document Name	OEGP-Test Plan_V.1.0.docx	Owner	NS,PW	Page	39 / 108
Document Type	Test Plan	Release Date	July 30, 2014	Print Date	July 30, 2014

1.6.5 Unit Test Case 35 (UTC -35)

findById(long id): Solidstate

Test data

Object Name	ID	Type
Solidsatate1	1	"solidsatate1"
Solidsatate2	2	"solidsatate2"

Test Case

case	Description	Input	Expect result	
		Id	Id	Type
1	Test get solidstate object by solidstate id.	1	1	"solidstate1"
2	Test get solistate object by solidstate id.	2	2	"solidstate2"
3	Test get solidstate object which is not contain in database.	3	null	Null
4	Test get object solidstate which is not contain in database.	4	null	Null

Document Name	OEGP-Test Plan_V.1.0.docx	Owner	NS,PW	Page	40 / 108
Document Type	Test Plan	Release Date	July 30, 2014	Print Date	July 30, 2014

1.6.6 Unit Test Case 36 (UTC -36)

findByType(String type): Solidstate

Test data

Object Name	ID	Type
Solidsatate1	1	"solidsatate1"
Solidsatate2	2	"solidsatate2"

Test Case

case	Description	Input	Expect result	
		Type	Id	Type
1	Test get solidstate object by solidstate type.	"solidstate1"	1	"solidstate1"
2	Test get solidstate object by solidstate type.	"solidstate2"	2	"solidstate2"
3	Test get solidstate object which is not contain in database.	"solidstate3"	null	
4	Test get object solidstate which is not contain in database.	"solidstate4"	null	

Document Name	OEGP-Test Plan_V.1.0.docx	Owner	NS,PW	Page	41 / 108
Document Type	Test Plan	Release Date	July 30, 2014	Print Date	July 30, 2014

1.7 HygroscopicityServiceimpl Class

1.7.1 Unit Test Case 37 (UTC -37)

add(Hygroscopicity hygroscopicity): Hygroscopicity

Test data

Object Name	ID	Type
Hygroscopicity1	1	"hygroscopicity1"
Hygroscopicity2	2	"hygroscopicity2"

Test Case

Case No.	Description	Input data		Expect Result	
		Id	Type	Id	Type
1	Test add hygroscopicity object which is correct the formal of hygroscopicity object.	null	"hygroscopicity3"	Not Null	"hygroscopicity3"
2	Test add hygroscopicity object which is correct the formal of hygroscopicity object.	null	"hygroscopicity4"	Not Null	"hygroscopicity4"
3	Test add hygroscopicity object which is contained in the database already.	1	"hygroscopicity1"	Null	Null
4	Test add hygroscopicity object which is contained in the database already.	2	"hygroscopicity1"	Null	Null

Document Name	OEGP-Test Plan_V.1.0.docx	Owner	NS,PW	Page	42 / 108
Document Type	Test Plan	Release Date	July 30, 2014	Print Date	July 30, 2014

1.7.2 Unit Test Case 38 (UTC -38)

update (**Hygroscopicity hygroscopicity**): **Hygroscopicity**

Test data

Object Name	ID	Type
Hygroscopicity1	1	"hygroscopicity1"
Hygroscopicity2	2	"hygroscopicity2"

Test Case

Case No.	Description	Input data		Expect Result	
		Id	Type	Id	Type
1	Test update hygroscopicity object which is correct the formal of hygroscopicity object and contained in the database.	1	"hygroscopicity1"	1	"hygroscopicity1"
2	Test update hygroscopicity object which is contained in database and correct format hygroscopicity object.	2	"hygroscopicity2"	2	"hygroscopicity2"
3	Test update hygroscopicity object which is not contained in database or incorrect format hygroscopicity object.	3	"hygroscopicity3"	Null	Null
4	Test update hygroscopicity object which is not contained in database or incorrect format.	4	"hygroscopicity4"	Null	Null

Document Name	OEGP-Test Plan_V.1.0.docx	Owner	NS,PW	Page	43 / 108
Document Type	Test Plan	Release Date	July 30, 2014	Print Date	July 30, 2014

1.7.3 Unit Test Case 39(UTC -39)

Delete(Hygroscopicity hygroscopticity): Hygroscopicity

Test data

Object Name	ID	Type
Hygroscopicity1	1	"hygroscopicity1"
Hygroscopicity2	2	"hygroscopicity2"

Test Case

Case No.	Description	Input data		Expect Result	
		Id	Type	Id	Type
1	Test delete hygroscopticity object which is contained in database and correct format hygroscopticity object.	1	"hygroscopicity1"	Null	"hygroscopicity1"
2	Test delete hygroscopticity object which is contained in database and correct format hygroscopticity object.	2	"hygroscopicity2"	Null	"hygroscopicity2"
3	Test delete hygroscopticity object which is not contained in database or incorrect format hygroscopticity object.	3	"hygroscopicity3"	Null	Null
4	Test delete hygroscopticity object which is not contained in database or incorrect format.	4	"hygroscopicity4"	Null	Null

Document Name	OEGP-Test Plan_V.1.0.docx	Owner	NS,PW	Page	44 / 108
Document Type	Test Plan	Release Date	July 30, 2014	Print Date	July 30, 2014

1.7.4 Unit Test Case 40 (UTC -40)

findAll():Hygroscopicity []

Test data

Object Name	ID	Type
Hygroscopicity1	1	"hygroscopicity1"
Hygroscopicity2	2	"hygroscopicity2"

Test Case

case	Description	Expect result
		List of hygroscopicity object
1	Test get all hygroscopicity list	{ Hygroscopicity1, Hygroscopicity2}

Document Name	OEGP-Test Plan_V.1.1.0.docx	Owner	NS,PW	Page	45 / 108
Document Type	Test Plan	Release Date	July 30, 2014	Print Date	July 30, 2014

1.7.5 Unit Test Case 41 (UTC -41)

findByld(long id): Hygroscopicity

Test data

Object Name	ID	Type
Hygroscopicity1	1	"hygroscopicity1"
Hygroscopicity2	2	"hygroscopicity2"

Test Case

case	Description	Input	Expect result	
		Id	Id	Type
1	Test get hygroscopicity object by hygroscopicity id.	1	1	"hygroscopicity1"
2	Test get hygroscopicity object by hygroscopicity id.	2	2	"hygroscopicity2"
3	Test get hygroscopicity object which is not contain in database.	3	null	Null
4	Test get object hygroscopicity which is not contain in database.	4	null	Null

Document Name	OEGP-Test Plan_V.1.0.docx	Owner	NS,PW	Page	46 / 108
Document Type	Test Plan	Release Date	July 30, 2014	Print Date	July 30, 2014

1.7.6 Unit Test Case 42 (UTC -42)

findByType(String type): Hygroscopicity

Test data

Object Name	ID	Type
Hygroscopicity1	1	"hygroscopicity1"
Hygroscopicity2	2	"hygroscopicity2"

Test Case

case	Description	Input	Expect result	
		Type	Id	Type
1	Test get hygroscopicity object by hygroscopicity type.	"hygroscopicity1"	1	"hygroscopicity1"
2	Test get hygroscopicity object by hygroscopicity type.	"hygroscopicity2"	2	"hygroscopicity2"
3	Test get hygroscopicity object which is not contain in database.	"hygroscopicity3"	null	
4	Test get hygroscopicity object which is not contain in database.	"hygroscopicity4"	null	

Document Name	OEGP-Test Plan_V.1.0.docx	Owner	NS,PW	Page	47 / 108
Document Type	Test Plan	Release Date	July 30, 2014	Print Date	July 30, 2014

1.8 ParticleSizeServiceImpl Class

1.8.1 Unit Test Case 43 (UTC -43)

add(ParticleSize particle Size): Particle Size

Test data

Object Name	ID	Type	MaxValue	MinValue	particleSizeValue
ParticleSize1	1	"particleSize 1"	4	2	5
ParticleSize 2	2	"particleSize 2"	7	1	3

Test Case

Case No.	Description	Input data					Expect Result				
		Id	Type	MaxValue	MinValue	particleSize Value	Id	Type	MaxV alue	MinValue	particleSize Value
1	Test add particleSize object which is correct the formal of particleSize object.	null	"particle Size 3"	4	4	2	Not null	"particleSize 3"	4	4	2
2	Test add particleSize object which is correct the formal of particleSize object.	null	"particle Size 4"	6	3	6	Not null	"particleSize 4"	6	3	6
3	Test add particleSize object which is contained in the database already.	1	"particle Size 1"	4	2	5	null	null	null	null	Null
4	Test add particleSize object which is contained in the database already.	2	"particle Size 2"	7	1	3	null	null	null	null	null

Document Name	OEGP-Test Plan_V.1.0.docx	Owner	NS,PW	Page	48 / 108
Document Type	Test Plan	Release Date	July 30, 2014	Print Date	July 30, 2014

1.8.2 Unit Test Case 44 (UTC -44)

update(ParticleSize particle Size): Particle Size

Test data

Object Name	ID	Type	MaxValue	MinValue	particleSizeValue
ParticleSize1	1	"particleSize 1"	4	2	5
ParticleSize 2	2	"particleSize 2"	7	1	3

Test Case

Case No.	Description	Input data					Expect Result				
		Id	Type	MaxValue	MinValue	particleSize Value	Id	Type	MaxValue	MinValue	particleSize Value
1	Test update particleSize object which is correct the formal of particleSize object and and contained in the database.	1	"particleSize 1"	6	4	3	1	"particleSize 1"	6	4	3
2	Test update particleSize object which is correct the formal of particleSize object and and contained in the database.	2	"particleSize 2"	7	3	10	2	"particleSize 2"	7	3	10
3	Test update particleSize object which is not contained in the database.	3	"particleSize3"	2	1	3	null	null	null	null	null
4	Test update particleSize object which is not contained in the database.	4	"particleSize 4"	3	2	5	null	null	null	null	null

Document Name	OEGP-Test Plan_V.1.0.docx	Owner	NS,PW	Page	49 / 108
Document Type	Test Plan	Release Date	July 30, 2014	Print Date	July 30, 2014

1.8.3 Unit Test Case 45 (UTC -45)

delete(ParticleSize particle Size): Particle Size

Test data

Object Name	ID	Type	MaxValue	MinValue	particleSizeValue
ParticleSize1	1	"particleSize 1"	4	2	5
ParticleSize2	2	"particleSize 2"	7	1	3

Test Case

Case No.	Description	Input data					Expect Result				
		Id	Type	MaxValue	MinValue	particleSize Value	Id	Type	MaxValue	MinValue	particleSize Value
1	Test delete particleSize object which is contained in database and correct format particleSize object.	1	"particleSize 1"	4	2	5	Null	"particleSize"	4	2	5
2	Test delete particleSize object which is contained in database and correct format particleSize object.	2	"particleSize 2"	7	3	10	null	"particleSize"	7	1	3
3	Test delete particleSize object which is not contained in database or incorrect format particleSize object.	3	"particleSize 3"	4	1	3	null	null	null	null	Null
4	Test delete particleSize object which is not contained in database or incorrect format solubility object.	4	"particleSize 4"	3	2	6	null	null	null	null	null

Document Name	OEGP-Test Plan_V.1.0.docx	Owner	NS,PW	Page	50 / 108
Document Type	Test Plan	Release Date	July 30, 2014	Print Date	July 30, 2014

1.8.4 Unit Test Case 46 (UTC -46)

findAll():ParticleSize []

Test data

Object Name	ID	Type	MaxValue	MinValue	particleSizeValue
ParticleSize1	1	"particleSize 1"	4	2	5
ParticleSize2	2	"particleSize 2"	7	1	3

Test Plan

case	Description	Expect result
		List of particleSize
1	Test get all particleSize list	{ParticleSize1,ParticleSize2}

Document Name	OEGP-Test Plan_V.1.0.docx	Owner	NS,PW	Page	51 / 108
Document Type	Test Plan	Release Date	July 30, 2014	Print Date	July 30, 2014

1.8.5 Unit Test Case 47 (UTC -47)

findById(long id):ParticleSize

Test data

Object Name	ID	Type	MaxValue	MinValue	particleSizeValue
ParticleSize1	1	"particleSize 1"	4	2	5
ParticleSize2	2	"particleSize 2"	7	1	3

Test Case

Case No.	Description	Input data	Expect Result				
		Id	Id	Type	MaxV alue	MinValue	particleSize Value
1	Test get particleSize object which is contained in database by particleSize id.	1	1	"particleSize 1"	4	2	5
2	Test get particleSize object which is contained in database by solubility id.	2	2	"particleSize 2"	7	1	3
3	Test get particleSize object which is not contain in database by solubility id.	3	null	Null	Null	Null	Null
4	Test get particleSize object which is not contain by particleSize id in database.	4	null	Null	Null	Null	Null

Document Name	OEGP-Test Plan_V.1.0.docx	Owner	NS,PW	Page	52 / 108
Document Type	Test Plan	Release Date	July 30, 2014	Print Date	July 30, 2014

1.8.6 Unit Test Case 48 (UTC -48)

findByType(String type):ParticleSize

Test data

Object Name	ID	Type	MaxValue	MinValue	particleSize Value
ParticleSize1	1	"particleSize 1"	4	2	5
ParticleSize2	2	"particleSize 2"	7	1	3

Test Case

Case No.	Description	Input data	Expect Result				
		particleSize Type	Id	Type	MaxValue	MinValue	particleSize Value
1	Test get particleSize object which is contained in the database by particleSize type.	"particleSize1"	1	"particleSize1"	4	2	5
2	Test get particleSize object which is contained in the database by solubility type.	"particleSize2"	2	"particleSize2"	7	1	3
3	Test get particleSize object which is not contain in database by particleSize type.	"particleSize3"	Null	Null	Null	Null	Null
4	Test get particleSize object which is not contain in database by particleSize type.	"particleSize4"	Null	Null	Null	Null	Null

Document Name	OEGP-Test Plan_V.1.0.docx	Owner	NS,PW	Page	53 / 108
Document Type	Test Plan	Release Date	July 30, 2014	Print Date	July 30, 2014

1.9 FlowabilityServiceimpl Class

1.9.1 Unit Test Case 49 (UTC -49)

add(Flowability flowability): Flowability

Test data

Object Name	ID	Type
Flowability1	1	"flowability1"
Flowability2	2	"flowability2"

Test Case

Case No.	Description	Input data		Expect Result	
		Id	Type	Id	Type
1	Test add Flowability object which is correct the formal of Flowability object.	null	"Flowability3"	Not Null	"Flowability3"
2	Test add Flowability object which is correct the formal of Flowability object.	null	"Flowability4"	Not Null	"Flowability4"
3	Test add Flowability object which is contained in the database already.	1	"Flowability1"	Null	Null
4	Test add Flowability object which is contained in the database already.	2	"Flowability2"	Null	Null

Document Name	OEGP-Test Plan_V.1.0.docx	Owner	NS,PW	Page	54 / 108
Document Type	Test Plan	Release Date	July 30, 2014	Print Date	July 30, 2014

1.9.2 Unit Test Case 50 (UTC -50)

update (**Flowability flowability**): **Flowability**

Test data

Object Name	ID	Type
Flowability1	1	"flowability1"
Flowability2	2	"flowability2"

Test Case

Case No.	Description	Input data		Expect Result	
		Id	Type	Id	Type
1	Test update flowability object which is correct the formal of flowability object and contained in the database.	1	"flowability1"	1	"flowability1"
2	Test update flowability object which is contained in database and correct format flowability object.	2	"flowability2"	2	"flowability2"
3	Test update flowability object which is not contained in database or incorrect format flowability object.	3	"flowability3"	Null	Null
4	Test update flowability object which is not contained in database or incorrect format.	4	"flowability4"	Null	Null

Document Name	OEGP-Test Plan_V.1.0.docx	Owner	NS,PW	Page	55 / 108
Document Type	Test Plan	Release Date	July 30, 2014	Print Date	July 30, 2014

1.9.3 Unit Test Case 51(UTC -51)

Delete(Flowability flowability): Flowability

Test data

Object Name	ID	Type
Flowability1	1	"flowability1"
Flowability2	2	"flowability2"

Test Case

Case No.	Description	Input data		Expect Result	
		Id	Type	Id	Type
1	Test delete flowability object which is contained in database and correct format flowability object.	1	"flowability1"	Null	"flowability1"
2	Test delete flowability object which is contained in database and correct format flowability object.	2	"flowability2"	Null	"flowability2"
3	Test delete flowability object which is not contained in database or incorrect format flowability object.	3	"flowability3"	Null	Null
4	Test delete flowability object which is not contained in database or incorrect format.	4	"flowability4"	Null	Null

Document Name	OEGP-Test Plan_V.1.0.docx	Owner	NS,PW	Page	56 / 108
Document Type	Test Plan	Release Date	July 30, 2014	Print Date	July 30, 2014

1.9.4 Unit Test Case 52 (UTC -52)

findAll():Flowability[]

Test data

Object Name	ID	Type
Flowability1	1	"flowability1"
Flowability2	2	"flowability2"

Test Case

case	Description	Expect result
		List of flowability object
1	Test get all flowability list	{ Flowability 1, Flowability 2 }

Document Name	OEGP-Test Plan_V.1.0.docx	Owner	NS,PW	Page	57 / 108
Document Type	Test Plan	Release Date	July 30, 2014	Print Date	July 30, 2014

1.9.5 Unit Test Case 53 (UTC -53)

findById(long id): Flowability

Test data

Object Name	ID	Type
Flowability1	1	"flowability1"
Flowability2	2	"flowability2"

Test Case

case	Description	Input	Expect result	
		Id	Id	Type
1	Test get flowability object by flowability id.	1	1	"flowability1"
2	Test get flowability object by flowability id.	2	2	"flowability2"
3	Test get flowability object which is not contain in database.	3	null	Null
4	Test get object flowability which is not contain in database.	4	null	Null

Document Name	OEGP-Test Plan_V.1.0.docx	Owner	NS,PW	Page	58 / 108
Document Type	Test Plan	Release Date	July 30, 2014	Print Date	July 30, 2014

1.9.6 Unit Test Case 54 (UTC -54)

findByType(String type): Flowability

Test data

Object Name	ID	Type
Flowability1	1	"Flowability1"
Flowability 2	2	"Flowability 2"

Test Case

case	Description	Input	Expect result	
		Type	Id	Type
1	Test get flowability object by flowability type.	"flowability1"	1	"flowability1"
2	Test get flowability object by flowability type.	"flowability2"	2	"flowability2"
3	Test get flowability object which is not contain in database.	"flowability3"	null	
4	Test get flowability object which is not contain in database.	"flowability4"	null	

Document Name	OEGP-Test Plan_V.1.0.docx	Owner	NS,PW	Page	59 / 108
Document Type	Test Plan	Release Date	July 30, 2014	Print Date	July 30, 2014

1.10 DensityServiceimpl Class

1.10.1 Unit Test Case 55 (UTC -55)

add(Density density): Density

Test data

Object Name	ID	Type	DensityValue
Density1	1	"density1"	5
Densityt2	2	"density2"	3

Test Case

Case No.	Description	Input data			Expect Result		
		Id	Type	Value	Id	Type	Value
1	Test add density object which is correct the formal of density object.	null	"density3"	2	Not null	"density3 "	2
2	Test add density object which is correct the formal of density object.	null	"density4"	6	Not null	"density4"	6
3	Test add density object which is contained in the database already.	1	"density1 "	5	Null		
4	Test add density object which is contained in the database already.	2	"density2"	3	Null		

Document Name	OEGP-Test Plan_V.1.0.docx	Owner	NS,PW	Page	60 / 108
Document Type	Test Plan	Release Date	July 30, 2014	Print Date	July 30, 2014

1.10.2 Unit Test Case 56 (UTC -56)
update(Density density): Density

Test data

Object Name	ID	Type	PartitionCoefficientValue
density1	1	"density1"	5
density2	2	"density2"	3

Test Case

Case No.	Description	Input data			Expect Result		
		Id	Type	Value	Id	Type	Value
1	Test update density object which is correct the formal of density object and contained in the database.	1	"density1"	2	1	"density"	2
2	Test update density object which is correct the formal of density object and contained in the database.	2	"density2"	6	2	"density"	6
3	Test update density object which is not contained in the database.	3	"density3"	3	null	Null	Null
4	Test update density object which is not contained in the database.	4	"density 4"	5	null	Null	Null

Document Name	OEGP-Test Plan_V.1.0.docx	Owner	NS,PW	Page	61 / 108
Document Type	Test Plan	Release Date	July 30, 2014	Print Date	July 30, 2014

1.10.3 Unit Test Case 57 (UTC -57)

Delete(Density density): Density Test data

Object Name	ID	Type	DensityValue
density1	1	"density1"	5
density2	2	"density2"	3

Test Case

Case No.	Description	Input data			Expect Result		
		Id	Type	Value	Id	Type	Value
1	Test delete density object which is contained in database and correct format density object.	1	"density1"	5	Null	"density1"	5
2	Test delete density object which is contained in database and correct format density object.	2	"density2"	3	Null	"density2"	3
3	Test delete density object which is not contained in database or incorrect format solubility object.	3	"density3"	3	null	Null	Null
4	Test delete density object which is not contained in database or incorrect format solubility object.	4	"density4"	6	null	Null	Null

Document Name	OEGP-Test Plan_V.1.0.docx	Owner	NS,PW	Page	62 / 108
Document Type	Test Plan	Release Date	July 30, 2014	Print Date	July 30, 2014

1.10.4 Unit Test Case 58 (UTC -58)

findAll():Density []

Test data

Object Name	ID	Type	Density Value
density1	1	"density1"	5
density2	2	"density2"	3

Test Case

case	Description	Expect result
		List of Density object
1	Test get all Density list	{Density1, Density2}

Document Name	OEGP-Test Plan_V.1.0.docx	Owner	NS,PW	Page	63 / 108
Document Type	Test Plan	Release Date	July 30, 2014	Print Date	July 30, 2014

1.10.5 Unit Test Case 59 (UTC -59)

findByld(long id): Density

Test data

Object Name	ID	Type	Density Value
density1	1	"density1"	5
density2	2	"density2"	3

Test Case

case	Description	Input	Expect result		
		Id	Id	Type	Value
1	Test get density object by density id.	1	1	"density1"	5
2	Test get density object by density id.	2	2	"density2"	3
3	Test get density object which is not contain in database.	3	null	Null	Null
4	Test get density object which is not contain in database.	4	null	Null	Null

Document Name	OEGP-Test Plan_V.1.0.docx	Owner	NS,PW	Page	64 / 108
Document Type	Test Plan	Release Date	July 30, 2014	Print Date	July 30, 2014

1.10.6 Unit Test Case 60 (UTC -60)

findByType(String type): Density

Test data

Object Name	ID	Type	PartitionCoefficientValue
density1	1	"density1"	5
density2	2	"density2"	3

Test Case

case	Description	Input	Expect result	
		Type	Id	Type
1	Test get density object by density type.	"density1"	1	"density1"
2	Test get density object by density type.	"density2"	2	"density2"
3	Test get density object which is not contain in database.	"density3"	null	
4	Test get density object which is not contain in database.	"density4"	null	

Document Name	OEGP-Test Plan_V.1.0.docx	Owner	NS,PW	Page	65 / 108
Document Type	Test Plan	Release Date	July 30, 2014	Print Date	July 30, 2014

1.11 CompoundFunction Class

1.11.1 Unit Test Case 61 (UTC -61)

add(CompoundFunction compoundFunction): CompoundFunction

Test data

Object Name	ID	Type	MaxValue	MinValue
CompoundFunction1	1	"compoundFunction1"	4	2
CompoundFunction2	2	"compoundFunction2"	7	1

Test Case

Case No.	Description	Input data				Expect Result			
		Id	Type	MaxValue	MinValue	Id	Type	MaxValue	MinValue
1	Test add compoundFunctionobject which is correct the formal of compoundFunction object.	null	"compoundFunction3"	4	4	Not null	"compoundFunction3"	4	4
2	Test add compoundFunction object which is correct the formal of compoundFunction object.	null	"compoundFunction4"	6	3	Not null	"compoundFunction4"	6	3
3	Test add compoundFunction object which is contained in the database already.	1	"compoundFunction1"	4	2	null	null	null	null
4	Test add compoundFunction object which is contained in the database already.	2	"compoundFunction2"	7	1	null	null	null	null

Document Name	OEGP-Test Plan_V.1.0.docx	Owner	NS,PW	Page	66 / 108
Document Type	Test Plan	Release Date	July 30, 2014	Print Date	July 30, 2014

1.11.2 Unit Test Case 62 (UTC -62)

Update (CompoundFunction compoundFunction): CompoundFunction

Test data

Object Name	ID	Type	MaxValue	MinValue
CompoundFunction1	1	"compoundFunction1"	4	2
CompoundFunction2	2	"compoundFunction2"	7	1

Test Case

Case No.	Description	Input data				Expect Result			
		Id	Type	MaxValue	MinValue	Id	Type	MaxValue	MinValue
1	Test update compoundFunction object which is correct the formal of compoundFunction object and exit in database.	1	"compoundFunction1"	6	4	1	"compoundFunction1"	6	4
2	Test update compoundFunction object which is correct the formal of compoundFunction object and exit in database.	2	"compoundFunction2"	7	3	2	"compoundFunction2"	7	3
3	Test update compoundFunction object which is not contained in the database.	3	"compoundFunction3"	2	1	null	null	null	null
4	Test update solubility object which is not contained in the database.	4	"compoundFunction4"	3	2	null	null	null	null

Document Name	OEGP-Test Plan_V.1.0.docx	Owner	NS,PW	Page	67 / 108
Document Type	Test Plan	Release Date	July 30, 2014	Print Date	July 30, 2014

1.11.3 Unit Test Case 63 (UTC -63)

delete(CompoundFunction compoundFunction): CompoundFunction

Test data

Object Name	ID	Type	MaxValue	MinValue
CompoundFunction1	1	"compoundFunction1"	4	2
CompoundFunction2	2	"compoundFunction2"	7	1

Test Case

Case No.	Description	Input data				Expect Result			
		Id	Type	MaxValue	MinValue	Id	Type	MaxValue	MinValue
1	Test delete compoundFunction object which is contained in database and correct format compoundFunction object.	1	"compoundFunction1"	4	2	Null	"compoundFunction1"	4	2
2	Test delete compoundFunction object which is contained in database and correct format compoundFunction object.	2	"compoundFunction2"	7	1	Null	"compoundFunction2"	7	1
3	Test delete compoundFunction object which is not contained in database or incorrect format compoundFunction object.	3	"compoundFunction3"	4	1	Null	Null	null	null
4	Test delete compoundFunction object which is not contained in database or incorrect format compoundFunction object.	4	"compoundFunction4"	3	2	Null	Null	null	null

Document Name	OEGP-Test Plan_V.1.0.docx	Owner	NS,PW	Page	68 / 108
Document Type	Test Plan	Release Date	July 30, 2014	Print Date	July 30, 2014

1.11.4 Unit Test Case 64 (UTC -64)

findAll():CompoundFunction[]

Test data

Object Name	ID	Type	MaxValue	MinValue
CompoundFunction1	1	"compoundFunction1"	4	2
CompoundFunction2	2	"compoundFunction2"	7	1

Test Plan

case	Description	Expect result
		List of compoundFunction object
1	Test get all CompoundFunction list	{ CompoundFunction1, CompoundFunction1}

Document Name	OEGP-Test Plan_V.1.0.docx	Owner	NS,PW	Page	69 / 108
Document Type	Test Plan	Release Date	July 30, 2014	Print Date	July 30, 2014

1.11.5 Unit Test Case 65 (UTC -65)

findById(long id):CompoundFunction

Test data

Object Name	ID	Type	MaxValue	MinValue
CompoundFunction1	1	"compoundFunction1"	4	2
CompoundFunction2	2	"compoundFunction2"	7	1

Test Case

Case No.	Description	Input data	Expect Result			
		Id	Id	Type	MaxValue	MinValue
1	Test get compoundFunction object which is contained in the database by compoundFunction id .	1	1	"compoundFunction1"	4	2
2	Test get compoundFunction object which is contained in the database by compoundFunction id.	2	2	"CompoundFunction2"	7	1
3	Test get compoundFunction object which is not contain in database by compoundFunction id.	3	null	Null	Null	Null
4	Test get compoundFunction object which is not contain in database by compoundFunction id.	4	null	Null	Null	Null

Document Name	OEGP-Test Plan_V.1.0.docx	Owner	NS,PW	Page	70 / 108
Document Type	Test Plan	Release Date	July 30, 2014	Print Date	July 30, 2014

1.11.6 Unit Test Case 66 (UTC -66)

findByType(String type):CompoundFunction

Test data

Object Name	ID	Type	MaxValue	MinValue
CompoundFunction1	1	"compoundFunction1"	4	2
CompoundFunction2	2	"compoundFunction2"	7	1

Test Case

Case No.	Description	Input data	Expect Result			
		Type	Id	Type	MaxValue	MinValue
1	Test get compoundFunction object which is contained in the database by compoundFunction type.	1	1	"compoundFunction1"	4	2
2	Test get compoundFunction object which is contained in the database by compoundFunction type.	2	2	"CompoundFunction2"	7	1
3	Test get compoundFunction object which is not contain in database by compoundFunction type.	3	null	Null	Null	Null
4	Test get compoundFunction object which is not contain in database by compoundFunction type.	4	null	Null	Null	Null

Document Name	OEGP-Test Plan_V.1.0.docx	Owner	NS,PW	Page	71 / 108
Document Type	Test Plan	Release Date	July 30, 2014	Print Date	July 30, 2014

1.12 SubstanceServiceImpl Class

Test data

WaterSolubility

Object Name	ID	Type	MaxValue	MinValue	SolubilityValue
Solubility1	1	"solubility1"	4	2	5
Solubility2	2	"solubility2"	5	3	2

DegradationMechinism

Object Name	ID	Type
DegradationMechinism1	1	"degradationMechinism1"
DegradationMechinish2	2	"degradationMechinism2"
DegradationMechinish3	3	"degradationMechinish3"
DegradationMechinish4	4	"degradationMechinish4"

KineticReaction

Object Name	ID	Type
KineticReaction1	1	"kineticReaction1"
KineticReaction2	2	"kineticReaction2"

Document Name	OEGP-Test Plan_V.1.0.docx	Owner	NS,PW	Page	72 / 108
Document Type	Test Plan	Release Date	July 30, 2014	Print Date	July 30, 2014

Stability

Object Name	id	degradationMechanism List	KineticReaction object
Stability1	1	{ DegradationMechinism1, DegradationMechinism2}	KineticReaction1
Stability2	2	{ DegradationMechinism3, DegradationMechinism4}	KineticReaction2

DissolutionProperty

Object Name	ID	Type	MaxValue	MinValue	PkaValue
Pka1	1	"pka1"	4	2	5
Pka2	2	"pka2"	7	1	3

PartitionCoefficient

Object Name	ID	Type	PartitionCoefficientValue
PartitionCoefficient1	1	"partitionCoefficient1"	5
PartitionCoefficient1	2	"partitionCoefficien2"	3

Solidstate

Object Name	ID	Type
Solidstate1	1	"solidstate1"
Solidstate2	2	"solidstate2"

Document Name	OEGP-Test Plan_V.1.0.docx	Owner	NS,PW	Page	73 / 108
Document Type	Test Plan	Release Date	July 30, 2014	Print Date	July 30, 2014

Hygroscopicity

Object Name	ID	Type
Hygroscopicity1	1	"hygroscopicity1"
Hygroscopicity2	2	"hygroscopicity2"

ParticleSize

Object Name	ID	Type	MaxValue	MinValue	ParticleSizeValue
ParticleSize1	1	"particleSize1"	4	2	5
ParticleSize 2	2	"particleSize2"	7	1	3

AlcoholSolubility

Object Name	ID	Type	MaxValue	MinValue	SolubilityValue
Solubility3	3	"solubility3"	2	1	4
Solubility4	4	"solubility4"	6	3	5

Flowability

Object Name	ID	Type
Flowability1	1	"flowability1"
Flowability2	2	"flowability2"

Document Name	OEGP-Test Plan_V.1.0.docx	Owner	NS,PW	Page	74 / 108
Document Type	Test Plan	Release Date	July 30, 2014	Print Date	July 30, 2014

Density

Object Name	ID	Type	Density Value
Density 1	1	"density 1"	5
Density 1	2	"density 2"	3

SaltForm

Object Name	ID	Weight	Pka Object
SaltForm1	1	4	Pka1
SaltForm2	2	3	Pka2

Document Name	OEGP-Test Plan_V.1.1.0.docx	Owner	NS,PW	Page	75 / 108
Document Type	Test Plan	Release Date	July 30, 2014	Print Date	July 30, 2014

Substance = Substance(long id, String name, Solubility watersolubilityproperty, PartitionCoefficient partitioncoefficientproperty, Flowability flowabilityproperty, Density powderdensityproperty, SaltForm saltproperty, Solubility alcoholsolubilityproperty, ParticleSize particleproperty, Hygroscopicity hygroscopicityproperty, Solidstate physicalformproperty, Pka dissolutionproperty, Stability stabilityproperty, float weightproperty ,String lonicity)

Substance1= {1,"substance1",Solubility1,PartitionCoefficient1, Flowability1, Density1,SaltForm1,Solubility1,ParticleSize1,Hygroscopicity1,Solidstate1,Pka,Stability,2,"thailand"}

Substance2= {1,"substance2",Solubility2,PartitionCoefficient2, Flowability2, Density1,SaltForm1,Solubility2,ParticleSize2,Hygroscopicity2,Solidstate2,Pka,Stability,2,"china"}

Test data is used for every test case in substance class

Document Name	OEGP-Test Plan_V.1.0.docx	Owner	NS,PW	Page	76 / 108
Document Type	Test Plan	Release Date	July 30, 2014	Print Date	July 30, 2014

1.12.1 Unit Test Case 67 (UTC -67)

add (Substance substance): Substance

Test Case

case	Description	Input	Expect Result
		Substance object	Substance object
1	Test add Substance object which is correct the formal of Substance object	{null,"substance3",Solubility3,PartitionCoefficient3, Flowability3, Density3,SaltForm3,Solubility3,ParticleSize3,Hygroscopicity3,Solidstate3,Pka3,Stability,3,"india"}	{not null,"substance3",Solubility3,PartitionCoefficient3, Flowability3, Density3,SaltForm3,Solubility3,ParticleSize3,Hygroscopicity3,Solid state3,Pka3,Stability,3,"india"}
2	Test add Substance object which is correct the formal of Substance object	{null,"substance4",Solubility4,PartitionCoefficient4, Flowability4, Density4,SaltForm4,Solubility4,ParticleSize4,Hygroscopicity4,Solidstate4,Pka4,Stability,4,"korea"}	{not null,"substance4",Solubility4,PartitionCoefficient4, Flowability4, Density4,SaltForm4,Solubility4,ParticleSize4,Hygroscopicity4,Solid state4,Pka4,Stability,4,"korea"}
3	Test add Substance object which is contained in the database already	{1,"substance1",Solubility1,PartitionCoefficient1, Flowability1, Density1,SaltForm1,Solubility1,ParticleSize1,Hygroscopicity1,Solidstate1,Pka,Stability,2,"thailand"}	null
4	Test add Substance object which is contained in the database already	{2,"substance2",Solubility2,PartitionCoefficient2, Flowability2, Density1,SaltForm1,Solubility2,ParticleSize2,Hygroscopicity2,Solidstate2,Pka,Stability,2,"china"}	null

Document Name	OEGP-Test Plan_V.1.0.docx	Owner	NS,PW	Page	77 / 108
Document Type	Test Plan	Release Date	July 30, 2014	Print Date	July 30, 2014

1.12.2 Unit Test Case 68 (UTC -68)

update(Substance substance): Substance

Test Case

case	Description	Input	Expect Result
		Substance object	Substance object
1	Test update substance object which is correct the formal of substance object and exit in database	{1,"substance1",Solubility1,PartitionCoefficient1,Flowability1,Density1,SaltForm1,Solubility1,ParticleSize1,Hygroscopicity1,Solidstate1,Pka,Stability,2,"thailand"}	{1,"substance1",Solubility,PartitionCoefficient1,Flowability1,Density1,SaltForm1,Solubility1,ParticleSize1,Hygroscopicity1,Solidstate1,Pka,Stability,2,"thailand"}
2	Test update substance object which is correct the formal of substance object and exit in database	{2,"substance2",Solubility2,PartitionCoefficient2,Flowability2,Density1,SaltForm1,Solubility2,ParticleSize2,Hygroscopicity2,Solidstate2,Pka,Stability,2,"china"}	{2,"substance2",Solubility,PartitionCoefficient2,Flowability2,Density1,SaltForm1,Solubility2,ParticleSize2,Hygroscopicity2,Solidstate2,Pka,Stability,2,"china"}
3	Test update substance object which is not contained in the database	{3,"substance3",Solubility3,PartitionCoefficient3,Flowability3,Density3,SaltForm3,Solubility3,ParticleSize3,Hygroscopicity3,Solidstate3,Pka3,Stability,3,"india"}	null
4	Test update substance object which is not contained in the database	{4,"substance4",Solubility4,PartitionCoefficient4,Flowability4,Density4,SaltForm4,Solubility4,ParticleSize4,Hygroscopicity4,Solidstate4,Pka4,Stability,4,"korea"}	null

Document Name	OEGP-Test Plan_V.1.0.docx	Owner	NS,PW	Page	78 / 108
Document Type	Test Plan	Release Date	July 30, 2014	Print Date	July 30, 2014

1.12.3 Unit Test Case 69 (UTC -69)

delete(Substance substance): Substance

Test Case

case	Description	Input	Expect Result
		Substance object	Substance object
1	Test delete substance object which is contained in database and correct format particleSize1object	{1,"substance1",Solubility,PartitionCoefficient1,Flowability1,Density1,SaltForm1,Solubility1,ParticleSize1,Hygroscopicity1,Solidstate1,Pka,Stability,2,"thailand"}	{null,"substance1",Solubility1,PartitionCoefficient1,Flowability1,Density1,SaltForm1,Solubility1,ParticleSize1,Hygroscopicity1,Solidstate1,Pka,Stability,2,"thailand"}
2	Test delete substance object which is contained in database and correct format particleSize1object	{2,"substance2",Solubility,PartitionCoefficient2,Flowability2,Density1,SaltForm1,Solubility2,ParticleSize2,Hygroscopicity2,Solidstate2,Pka,Stability,2,"china"}	{null,"substance2",Solubility2,PartitionCoefficient2,Flowability2,Density1,SaltForm1,Solubility2,ParticleSize2,Hygroscopicity2,Solidstate2,Pka,Stability,2,"china"}
3	Test delete substance object which is not contained in database or incorrect format substance object	{3,"substance3",Solubility3,PartitionCoefficient3,Flowability3,Density3,SaltForm3,Solubility3,ParticleSize3,Hygroscopicity3,Solidstate3,Pka3,Stability,3,"india"}	null
4	Test delete particleSize object which is not contained in database or incorrect format particleSize object	{4,"substance4",Solubility4,PartitionCoefficient4,Flowability4,Density4,SaltForm4,Solubility4,ParticleSize4,Hygroscopicity4,Solidstate4,Pka4,Stability,4,"korea"}	null

Document Name	OEGP-Test Plan_V.1.0.docx	Owner	NS,PW	Page	79 / 108
Document Type	Test Plan	Release Date	July 30, 2014	Print Date	July 30, 2014

1.12.4 Unit Test Case 70 (UTC -70)

findAll():Substance []

Test Case

case	Description	Expect result
		List of Substance
1	Test get all substance list	{ Substance1, Substance 2}

Document Name	OEGP-Test Plan_V.1.1.0.docx	Owner	NS,PW	Page	80 / 108
Document Type	Test Plan	Release Date	July 30, 2014	Print Date	July 30, 2014

1.12.5 Unit Test Case 71 (UTC -71)

findById(long id): Substance

Test Case

case	Description	Input	Expect result
		id	Substance object
1	Test get substance object by substance id	1	{1,"substance1",Solubility1,PartitionCoefficient1, Flowability1, Density1,SaltForm1,Solubility1,ParticleSize1,Hygroscopicity1,Solidstate1,Pka,Stability,2,"thailand"}
2	Test get substance object by substance id	2	{2,"substance2",Solubility,PartitionCoefficient2, Flowability2, Density1,SaltForm1,Solubility2,ParticleSize2,Hygroscopicity2,Solidstate2,Pka,Stability,2,"china"}
3	Test get substance object which is not contain in database	3	null
4	Test get substance object which is not contain in database	4	null

Document Name	OEGP-Test Plan_V.1.0.docx	Owner	NS,PW	Page	81 / 108
Document Type	Test Plan	Release Date	July 30, 2014	Print Date	July 30, 2014

1.12.6 Unit Test Case 72 (UTC -72)

findByName(String name): Substance

Test Case

case	Description	Input	Expect result
		name	Substance object
1	Test get substance object by substance name	"substance1"	{1,"substance1",Solubility1,PartitionCoefficient1, Flowability1, Density1,SaltForm1,Solubility1,ParticleSize1,Hygroscopicity1,Solidstate1,Pka,Stability,2,"thailand"}
2	Test get substance object by substance name	"substance2"	{2,"substance2",Solubility1,PartitionCoefficient2, Flowability2, Density1,SaltForm1,Solubility2,ParticleSize2,Hygroscopicity2,Solidstate2,Pka,Stability,2,"china"}
3	Test get substance object which is not contain in database	"substance3"	null
4	Test get substance object which is not contain in database	"substance4"	null

Document Name	OEGP-Test Plan_V.1.0.docx	Owner	NS,PW	Page	82 / 108
Document Type	Test Plan	Release Date	July 30, 2014	Print Date	July 30, 2014

1.13 ExcipientServiceImpl Class

1.13.1 Unit Test Case 73 (UTC -73)

addExcipient (Excipient excipient):excipient

Test data

CompoundFunction

Object Name	ID	Type	MaxValue	MinValue
CompoundFunction1	1	"compoundFunction 1"	4	2
CompoundFunction2	2	"compoundFunction2"	7	1
CompoundFunction3	3	"compoundFunction3"	3	1
CompoundFunction4	4	"compoundFunction4"	6	2

Excipient

Object Name	ID	Quantity	CompoundFunction list	Substance
Excipient1	1	1	{ CompoundFunction1, CompoundFunction2}	Substance1
Excipient2	2	2	{CompoundFunction3, CompoundFunction4}	Substance2

Document Name	OEGP-Test Plan_V.1.0.docx	Owner	NS,PW	Page	83 / 108
Document Type	Test Plan	Release Date	July 30, 2014	Print Date	July 30, 2014

Test Case

case	Description	Input				Expect Result			
		ID	Quantity	CompoundFunction list	Substance	ID	Quantity	CompoundFunction list	Substance
1	Test add Excipient object which is correct the formal of Excipient object	null	4	{ CompoundFunction1, CompoundFunction2}	Substance1	Not null	4	{ CompoundFunction1, CompoundFunction2}	Substan1
2	Test add Excipient object which is correct the formal of Excipient object	null	5	{CompoundFunction1, CompoundFunction2}	Substance1	Not null	8	{CompoundFunction1, CompoundFunction2}	Substan2
3	Test add Excipient object which is contained in the database already	1	1	{ CompoundFunction1, CompoundFunction2}	Substance1	null	null	null	null
4	Test add Excipient object which is contained in the database already	2	2	{CompoundFunction1, CompoundFunction2}	Substance2	null	null	null	null

Document Name	OEGP-Test Plan_V.1.0.docx	Owner	NS,PW	Page	84 / 108
Document Type	Test Plan	Release Date	July 30, 2014	Print Date	July 30, 2014

1.13.2 Unit Test Case 74 (UTC -74)

updateExcipient (Excipient excipient):excipient

Test data

CompoundFunction

Object Name	ID	Type	MaxValue	MinValue
CompoundFunction1	1	"compoundFunction 1"	4	2
CompoundFunction2	2	"compoundFunction2"	7	1
CompoundFunction3	3	"compoundFunction3"	3	1
CompoundFunction4	4	"compoundFunction4"	6	2

Excipient

Object Name	ID	Quantity	CompoundFunction list	Substance
Excipient1	1	1	{ CompoundFunction1, CompoundFunction2}	Substance1
Excipient2	2	2	{CompoundFunction3, CompoundFunction4}	Substance2

Document Name	OEGP-Test Plan_V.1.0.docx	Owner	NS,PW	Page	85 / 108
Document Type	Test Plan	Release Date	July 30, 2014	Print Date	July 30, 2014

Test Case

case	Description	Input				Expect Result			
		ID	Quantity	CompoundFunction list	Substance	ID	Quantity	CompoundFunction list	Substance
1	Test update excipient object which is correct the formal of excipient object and exit in database	1	3	{ CompoundFunction1, CompoundFunction2}	Substance1	1	3	{ CompoundFunction1, CompoundFunction2}	Substance1
2	Test update excipient object which is correct the formal of excipient object and exit in database	2	5	{CompoundFunction3, CompoundFunction4}	Substance2	2	5	{CompoundFunction3, CompoundFunction4}	Substance2
3	Test update excipient object which is not contained in the database	3	3	2	1	null	null	null	null
4	Test update excipient object which is not contained in the database	4	14	3	2	null	null	null	null

Document Name	OEGP-Test Plan_V.1.0.docx	Owner	NS,PW	Page	86 / 108
Document Type	Test Plan	Release Date	July 30, 2014	Print Date	July 30, 2014

1.13.3 Unit Test Case 75 (UTC -75)

deleteExcipient (Excipient excipient):excipient

Test data

CompoundFunction

Object Name	ID	Type	MaxValue	MinValue
CompoundFunction1	1	"compoundFunction 1"	4	2
CompoundFunction2	2	"compoundFunction2"	7	1
CompoundFunction3	3	"compoundFunction3"	3	1
CompoundFunction4	4	"compoundFunction4"	6	2

Excipient

Object Name	ID	Quantity	CompoundFunction list	Substance
Excipient1	1	1	{ CompoundFunction1, CompoundFunction2}	Substance1
Excipient2	2	2	{CompoundFunction3, CompoundFunction4}	Substance2

Document Name	OEGP-Test Plan_V.1.0.docx	Owner	NS,PW	Page	87 / 108
Document Type	Test Plan	Release Date	July 30, 2014	Print Date	July 30, 2014

Test Case

case	Description	Input				Expect Result			
		ID	Quantity	CompoundFunction list	Substance	ID	Quantity	CompoundFunction list	Substance
1	Test delete excipient object which is contained in database and correct format excipient object	1	3	{ CompoundFunction1, CompoundFunction2}	Substance1	null	3	{ CompoundFunction1, CompoundFunction2}	Substance1
2	Test update excipient object which is correct the formal of excipient object and exit in database	2	5	{CompoundFunction3, CompoundFunction4}	Substance2	null	5	{CompoundFunction3, CompoundFunction4}	Substance2
3	Test update excipient object which is not contained in the database	3	3	2	1	null	null	null	null
4	Test update excipient object which is not contained in the database	4	14	3	2	null	null	null	null

Document Name	OEGP-Test Plan_V.1.0.docx	Owner	NS,PW	Page	88 / 108
Document Type	Test Plan	Release Date	July 30, 2014	Print Date	July 30, 2014

1.13.4 Unit Test Case 76 (UTC -76)

findAll():Excipient []

Test data

CompoundFunction

Object Name	ID	Type	MaxValue	MinValue
CompoundFunction1	1	"compoundFunction 1"	4	2
CompoundFunction2	2	"compoundFunction2"	7	1
CompoundFunction3	3	"compoundFunction3"	3	1
CompoundFunction4	4	"compoundFunction4"	6	2

Excipient

Object Name	ID	Quantity	CompoundFunction list	Substance
Excipient1	1	1	{ CompoundFunction1, CompoundFunction2}	Substance1
Excipient2	2	2	{CompoundFunction3, CompoundFunction4}	Substance2

Test Case

case	Description	Expect result
		List of Excipient
1	Test get all excipient list	{excipient1,excipient2}

Document Name	OEGP-Test Plan_V.1.0.docx	Owner	NS,PW	Page	89 / 108
Document Type	Test Plan	Release Date	July 30, 2014	Print Date	July 30, 2014

1.13.5 Unit Test Case 77 (UTC -77)

findById(long id): Excipient

Test data

CompoundFunction

Object Name	ID	Type	MaxValue	MinValue
CompoundFunction1	1	"compoundFunction 1"	4	2
CompoundFunction2	2	"compoundFunction2"	7	1
CompoundFunction3	3	"compoundFunction3"	3	1
CompoundFunction4	4	"compoundFunction4"	6	2

Excipient

Object Name	ID	Quantity	CompoundFunction list	Substance
Excipient1	1	1	{ CompoundFunction1, CompoundFunction2}	Substance1
Excipient2	2	2	{CompoundFunction3, CompoundFunction4}	Substance2

Document Name	OEGP-Test Plan_V.1.0.docx	Owner	NS,PW	Page	90 / 108
Document Type	Test Plan	Release Date	July 30, 2014	Print Date	July 30, 2014

Test Case

case	Description	Input	Expect Result			
		Id	Id	Quantity	CompoundFunction list	Substance
1	Test get excipient object by excipient id	1	1	1	{ CompoundFunction1, CompoundFunction2}	Substance1
2	Test get excipient object by excipient id	2	2	2	{CompoundFunction3, CompoundFunction4}	Substance2
3	Test get excipient object which is not contain in database	3	null			
4	Test get excipient object which is not contain in database	4	null			

Document Name	OEGP-Test Plan_V.1.0.docx	Owner	NS,PW	Page	91 / 108
Document Type	Test Plan	Release Date	July 30, 2014	Print Date	July 30, 2014

1.14 TabletFormulationServiceImpl Class

1.14.1 Unit Test Case 78 (UTC -78)

addTabletFormulation (TabletFormulation tabletFormulation): TabletFormulation

Test data

Compound Function data

Object Name	ID	Type	MaxValue	MinValue
CompoundFunction1	1	"compoundFunction1"	4	2
CompoundFunction2	2	"compoundFunction2"	7	1
CompoundFunction3	3	"compoundFunction3"	3	1
CompoundFunction4	4	"compoundFunction4"	6	3
CompoundFunction5	5	"compoundFunction5"	5	1
CompoundFunction6	6	"compoundFunction6"	3	2
CompoundFunction7	7	"compoundFunction7"	9	2
CompoundFunction8	8	"compoundFunction8"	4	1

Substance data

Substance1= {1,"substance1",Solubility1,PartitionCoefficient1, Flowability1,
Density1,SaltForm1,Solubility1,ParticleSize1,Hygroscopicity1,Solidstate1,Pka,Stability,2,"thailand"}

Substance2= {1,"substance2",Solubility2,PartitionCoefficient2, Flowability2,
Density1,SaltForm1,Solubility2,ParticleSize2,Hygroscopicity2,Solidstate2,Pka,Stability,2,"china"}

Document Name	OEGP-Test Plan_V.1.0.docx	Owner	NS,PW	Page	92 / 108
Document Type	Test Plan	Release Date	July 30, 2014	Print Date	July 30, 2014

Excipient data

Object Name	ID	Quantity	CompoundFunction list	Substance object
Excipient1	1	1	{ CompoundFunction1, CompoundFunction2}	Substance1
Excipient2	2	2	{CompoundFunction3, CompoundFunction4}	Substance2
Excipient3	3	5	{CompoundFunction5, CompoundFunction6}	Substance1
Excipient4	4	7	{CompoundFunction7, CompoundFunction8}	Substance2

Tablet Formulation

Object Name	ID	name	excipient list
TabletFormulation1	1	"tabletFormulation1"	{ Excipient1, Excipient2}
TabletFormulation2	2	"tabletFormulation2"	{ Excipient3, Excipient4}

Document Name	OEGP-Test Plan_V.1.0.docx	Owner	NS,PW	Page	93 / 108
Document Type	Test Plan	Release Date	July 30, 2014	Print Date	July 30, 2014

Test Case

case	Description	Input				Expect Result			
		ID	name	Quantity	excipient list Substance	ID	name	Quantity	excipient list
1	Test add tabletFormulation object which is correct the formal of tabletFormulation object	null	"tabletFormulation3"	4	{ Excipient 1, Excipient 2}	Not null	"tabletFormulation3"	4	{ Excipient 1, Excipient 2}
2	Test add tabletFormulation object which is correct the formal of tabletFormulation object	null	"tabletFormulation4"	5	{ Excipient 1, Excipient 2}	Not null	"tabletFormulation4"	8	{ Excipient 1, Excipient 2}
3	Test add tabletFormulation object which is contained in the database already	1	"tabletFormulation1"	1	{ Excipient1, Excipient 2}	null	null	null	null
4	Test add tabletFormulation object which is contained in the database already	2	"tabletFormulation2"	2	{ Excipient1, Excipient 2}	null	null	nukl	null

Document Name	OEGP-Test Plan_V.1.0.docx	Owner	NS,PW	Page	94 / 108
Document Type	Test Plan	Release Date	July 30, 2014	Print Date	July 30, 2014

1.14.2 Unit Test Case 79 (UTC -79)

updateTabletFormulation (TabletFormulation tabletFormulation): TabletFormulation

Test data

Compound Function data

Object Name	ID	Type	MaxValue	MinValue
CompoundFunction1	1	"compoundFunction1"	4	2
CompoundFunction2	2	"compoundFunction2"	7	1
CompoundFunction3	3	"compoundFunction3"	3	1
CompoundFunction4	4	"compoundFunction4"	6	3
CompoundFunction5	5	"compoundFunction5"	5	1
CompoundFunction6	6	"compoundFunction6"	3	2
CompoundFunction7	7	"compoundFunction7"	9	2
CompoundFunction8	8	"compoundFunction8"	4	1

Substance data

Substance1= {1,"substance1",Solubility1,PartitionCoefficient1, Flowability1,
Density1,SaltForm1,Solubility1,ParticleSize1,Hygroscopicity1,Solidstate1,Pka,Stability,2,"thailand"}

Substance2= {1,"substance2",Solubility2,PartitionCoefficient2, Flowability2,
Density1,SaltForm1,Solubility2,ParticleSize2,Hygroscopicity2,Solidstate2,Pka,Stability,2,"china"}

Document Name	OEGP-Test Plan_V.1.0.docx	Owner	NS,PW	Page	95 / 108
Document Type	Test Plan	Release Date	July 30, 2014	Print Date	July 30, 2014

Excipient data

Object Name	ID	Quantity	CompoundFunction list	Substance object
Excipient1	1	1	{ CompoundFunction1, CompoundFunction2}	Substance1
Excipient2	2	2	{CompoundFunction3, CompoundFunction4}	Substance2
Excipient3	3	5	{CompoundFunction5, CompoundFunction6}	Substance1
Excipient4	4	7	{CompoundFunction7, CompoundFunction8}	Substance2

Tablet Formulation

Object Name	ID	name	excipient list
TabletFormulation1	1	"tabletFormulation1"	{ Excipient1, Excipient2}
TabletFormulation2	2	"tabletFormulation2"	{ Excipient3, Excipient4}

Document Name	OEGP-Test Plan_V.1.0.docx	Owner	NS,PW	Page	96 / 108
Document Type	Test Plan	Release Date	July 30, 2014	Print Date	July 30, 2014

Test Case

case	Description	Input				Expect Result			
		ID	name	Quantity	excipient list Substance	ID	name	Quantity	excipient list
1	Test update tabletFormulation object which is correct the formal of tabletFormulation object	1	"tabletFormulation1"	7	{ Excipient 3, Excipient 2}	1	"tabletFormulation3"	7	{ Excipient 3, Excipient 2}
2	Test update tabletFormulation object which is correct the formal of tabletFormulation object	2	"tabletFormulation2"	2	{ Excipient 1, Excipient 4}	2	"tabletFormulation4"	2	{ Excipient 1, Excipient 4}
3	Test update tabletFormulation object which is contained in the database already	3	"tabletFormulation1"	1	{ Excipient1, Excipient 2}	null	null	null	null
4	Test update tabletFormulation object which is contained in the database already	4	"tabletFormulation2"	2	{ Excipient1, Excipient 2}	null	null	nukl	null

Document Name	OEGP-Test Plan_V.1.0.docx	Owner	NS,PW	Page	97 / 108
Document Type	Test Plan	Release Date	July 30, 2014	Print Date	July 30, 2014

1.14.3 Unit Test Case 80 (UTC -80)

deleteTabletFormulation (TabletFormulation tabletFormulation): TabletFormulation

Test data

Compound Function data

Object Name	ID	Type	MaxValue	MinValue
CompoundFunction1	1	"compoundFunction1"	4	2
CompoundFunction2	2	"compoundFunction2"	7	1
CompoundFunction3	3	"compoundFunction3"	3	1
CompoundFunction4	4	"compoundFunction4"	6	3
CompoundFunction5	5	"compoundFunction5"	5	1
CompoundFunction6	6	"compoundFunction6"	3	2
CompoundFunction7	7	"compoundFunction7"	9	2
CompoundFunction8	8	"compoundFunction8"	4	1

Substance data

Substance1= {1,"substance1",Solubility1,PartitionCoefficient1, Flowability1,
Density1,SaltForm1,Solubility1,ParticleSize1,Hygroscopicity1,Solidstate1,Pka,Stability,2,"thailand"}

Substance2= {1,"substance2",Solubility2,PartitionCoefficient2, Flowability2,
Density1,SaltForm1,Solubility2,ParticleSize2,Hygroscopicity2,Solidstate2,Pka,Stability,2,"china"}

Document Name	OEGP-Test Plan_V.1.0.docx	Owner	NS,PW	Page	98 / 108
Document Type	Test Plan	Release Date	July 30, 2014	Print Date	July 30, 2014

Excipient data

Object Name	ID	Quantity	CompoundFunction list	Substance object
Excipient1	1	1	{ CompoundFunction1, CompoundFunction2}	Substance1
Excipient2	2	2	{CompoundFunction3, CompoundFunction4}	Substance2
Excipient3	3	5	{CompoundFunction5, CompoundFunction6}	Substance1
Excipient4	4	7	{CompoundFunction7, CompoundFunction8}	Substance2

Tablet Formulation

Object Name	ID	name	excipient list
TabletFormulation1	1	"tabletFormulation1"	{ Excipient1, Excipient2}
TabletFormulation2	2	"tabletFormulation2"	{ Excipient3, Excipient4}

Document Name	OEGP-Test Plan_V.1.0.docx	Owner	NS,PW	Page	99 / 108
Document Type	Test Plan	Release Date	July 30, 2014	Print Date	July 30, 2014

Test Case

case	Description	Input				Expect Result			
		ID	name	Quantity	excipient list Substance	ID	name	Quantity	excipient list
1	Test delete tabletFormulation object which is correct the formal of tabletFormulation object	1	"tabletFormulation1"	7	{ Excipient 3, Excipient 2}	Null	"tabletFormulation3"	7	{ Excipient 3, Excipient 2}
2	Test delete tabletFormulation object which is correct the formal of tabletFormulation object	2	"tabletFormulation2"	2	{ Excipient 1, Excipient 4}	Null	"tabletFormulation4"	2	{ Excipient 1, Excipient 4}
3	Test delete tabletFormulation object which is contained in the database already	3	"tabletFormulation1"	1	{ Excipient1, Excipient 2}	null	null	null	null
4	Test delete tabletFormulation object which is contained in the database already	4	"tabletFormulation2"	2	{ Excipient1, Excipient 2}	null	null	nukl	null

Document Name	OEGP-Test Plan_V.1.0.docx	Owner	NS,PW	Page	100 / 108
Document Type	Test Plan	Release Date	July 30, 2014	Print Date	July 30, 2014

1.14.4 Unit Test Case 81 (UTC -81)

findAll(): TabletFormulation[]

Test data

Compound Function data

Object Name	ID	Type	MaxValue	MinValue
CompoundFunction1	1	"compoundFunction1"	4	2
CompoundFunction2	2	"compoundFunction2"	7	1
CompoundFunction3	3	"compoundFunction3"	3	1
CompoundFunction4	4	"compoundFunction4"	6	3
CompoundFunction5	5	"compoundFunction5"	5	1
CompoundFunction6	6	"compoundFunction6"	3	2
CompoundFunction7	7	"compoundFunction7"	9	2
CompoundFunction8	8	"compoundFunction8"	4	1

Substance data

Substance1= {1,"substance1",Solubility1,PartitionCoefficient1, Flowability1,
Density1,SaltForm1,Solubility1,ParticleSize1,Hygroscopicity1,Solidstate1,Pka,Stability,2,"thailand"}

Substance2= {1,"substance2",Solubility2,PartitionCoefficient2, Flowability2,
Density1,SaltForm1,Solubility2,ParticleSize2,Hygroscopicity2,Solidstate2,Pka,Stability,2,"china"}

Document Name	OEGP-Test Plan_V.1.0.docx	Owner	NS,PW	Page	101 / 108
Document Type	Test Plan	Release Date	July 30, 2014	Print Date	July 30, 2014

Excipient data

Object Name	ID	Quantity	CompoundFunction list	Substance object
Excipient1	1	1	{ CompoundFunction1, CompoundFunction2}	Substance1
Excipient2	2	2	{CompoundFunction3, CompoundFunction4}	Substance2
Excipient3	3	5	{CompoundFunction5, CompoundFunction6}	Substance1
Excipient4	4	7	{CompoundFunction7, CompoundFunction8}	Substance2

Tablet Formulation

Object Name	ID	name	excipient list
TabletFormulation1	1	"tabletFormulation1"	{ Excipient1, Excipient2}
TabletFormulation2	2	"tabletFormulation2"	{ Excipient3, Excipient4}

Test Case

case	Description	Expect result
		List of tableFormulation
1	Test get all tableFormulation list	{ tabletFormulation1, tabletFormulation2}

Document Name	OEGP-Test Plan_V.1.0.docx	Owner	NS,PW	Page	102 / 108
Document Type	Test Plan	Release Date	July 30, 2014	Print Date	July 30, 2014

1.14.5 Unit Test Case 82 (UTC -82)

findById(): TabletFormulation

Test data

Compound Function data

Object Name	ID	Type	MaxValue	MinValue
CompoundFunction1	1	"compoundFunction1"	4	2
CompoundFunction2	2	"compoundFunction2"	7	1
CompoundFunction3	3	"compoundFunction3"	3	1
CompoundFunction4	4	"compoundFunction4"	6	3
CompoundFunction5	5	"compoundFunction5"	5	1
CompoundFunction6	6	"compoundFunction6"	3	2
CompoundFunction7	7	"compoundFunction7"	9	2
CompoundFunction8	8	"compoundFunction8"	4	1

Substance data

Substance1= {1,"substance1",Solubility1,PartitionCoefficient1, Flowability1,
Density1,SaltForm1,Solubility1,ParticleSize1,Hygroscopicity1,Solidstate1,Pka,Stability,2,"thailand"}

Substance2= {1,"substance2",Solubility2,PartitionCoefficient2, Flowability2,
Density1,SaltForm1,Solubility2,ParticleSize2,Hygroscopicity2,Solidstate2,Pka,Stability,2,"china"}

Document Name	OEGP-Test Plan_V.1.0.docx	Owner	NS,PW	Page	103 / 108
Document Type	Test Plan	Release Date	July 30, 2014	Print Date	July 30, 2014

Excipient data

Object Name	ID	Quantity	CompoundFunction list	Substance object
Excipient1	1	1	{ CompoundFunction1, CompoundFunction2}	Substance1
Excipient2	2	2	{CompoundFunction3, CompoundFunction4}	Substance2
Excipient3	3	5	{CompoundFunction5, CompoundFunction6}	Substance1
Excipient4	4	7	{CompoundFunction7, CompoundFunction8}	Substance2

Object Name	ID	name	excipient list
TabletFormulation1	1	"tabletFormulation1"	{ Excipient1, Excipient2}
TabletFormulation2	2	"tabletFormulation2"	{ Excipient3, Excipient4}

Document Name	OEGP-Test Plan_V.1.0.docx	Owner	NS,PW	Page	104 / 108
Document Type	Test Plan	Release Date	July 30, 2014	Print Date	July 30, 2014

Test Case

case	Description	Input	Expect Result		
		Id	ID	name	excipient list
1	Test get tabletFormulation object by tabletFormulation id	1	1	"tabletFormulation1"	{ Excipient1, Excipient2}
2	Test get tabletFormulation object by TabletFormulation id	2	2	"tabletFormulation2"	{ Excipient3, Excipient4}
3	Test get tabletFormulation object which is not contain in database	3	null		
4	Test get tabletFormulation object which is not contain in database	4	null		

Document Name	OEGP-Test Plan_V.1.0.docx	Owner	NS,PW	Page	105 / 108
Document Type	Test Plan	Release Date	July 30, 2014	Print Date	July 30, 2014

1.14.6 Unit Test Case 83 (UTC -83)

findByName(): TabletFormulation

Test data

Compound Function data

Object Name	ID	Type	MaxValue	MinValue
CompoundFunction1	1	"compoundFunction1"	4	2
CompoundFunction2	2	"compoundFunction2"	7	1
CompoundFunction3	3	"compoundFunction3"	3	1
CompoundFunction4	4	"compoundFunction4"	6	3
CompoundFunction5	5	"compoundFunction5"	5	1
CompoundFunction6	6	"compoundFunction6"	3	2
CompoundFunction7	7	"compoundFunction7"	9	2
CompoundFunction8	8	"compoundFunction8"	4	1

Substance data

Substance1= {1,"substance1",Solubility1,PartitionCoefficient1, Flowability1,
Density1,SaltForm1,Solubility1,ParticleSize1,Hygroscopicity1,Solidstate1,Pka,Stability,2,"thailand"}

Substance2= {1,"substance2",Solubility2,PartitionCoefficient2, Flowability2,
Density1,SaltForm1,Solubility2,ParticleSize2,Hygroscopicity2,Solidstate2,Pka,Stability,2,"china"}

Document Name	OEGP-Test Plan_V.1.0.docx	Owner	NS,PW	Page	106 / 108
Document Type	Test Plan	Release Date	July 30, 2014	Print Date	July 30, 2014

Excipient data

Object Name	ID	Quantity	CompoundFunction list	Substance object
Excipient1	1	1	{ CompoundFunction1, CompoundFunction2}	Substance1
Excipient2	2	2	{CompoundFunction3, CompoundFunction4}	Substance2
Excipient3	3	5	{CompoundFunction5, CompoundFunction6}	Substance1
Excipient4	4	7	{CompoundFunction7, CompoundFunction8}	Substance2

Object Name	ID	name	excipient list
TabletFormulation1	1	"tabletFormulation1"	{ Excipient1, Excipient2}
TabletFormulation2	2	"tabletFormulation2"	{ Excipient3, Excipient4}

Document Name	OEGP-Test Plan_V.1.0.docx	Owner	NS,PW	Page	107 / 108
Document Type	Test Plan	Release Date	July 30, 2014	Print Date	July 30, 2014

Test Case

case	Description	Input	Expect result		
		name	ID	name	excipient list
1	Test get tabletFormulation object by tabletFormulation name	"tabletFormulation1"	1	"tabletFormulation1"	{ Excipient1, Excipient2}
2	Test get tabletFormulation object by tabletFormulation name	"tabletFormulation2"	2	"tabletFormulation2"	{ Excipient3, Excipient4}
3	Test get TabletFormulation object which is not contain in database	"tabletFormulation3"	null		
4	Test get TabletFormulation object which is not contain in database	"tabletFormulation4"	null		

Document Name	OEGP-Test Plan_V.1.0.docx	Owner	NS,PW	Page	108 / 108
Document Type	Test Plan	Release Date	July 30, 2014	Print Date	July 30, 2014